

ISLAND COUNTY  
PROJECT COMPLETION REPORT  
COASTAL ZONE PLANNING ASSISTANCE PROGRAM

CONTRACT #G0086036

The preparation of this report was financially aided through a Grant from the Washington State Department of Ecology with funds obtained from the National Oceanic and Atmospheric Administration and appropriated from Section 306 of the Coastal Zone Management Act of 1972.

GB625.W2I85 1986

ISLAND COUNTY PLANNING DEPARTMENT  
P.O. BOX 698  
COUPEVILLE, WASHINGTON 98239

JUNE 30, 1986

COASTAL ZONE MANAGEMENT GRANT

#G0086036

PROJECT COMPLETION REPORT

SUMMARY ACCOUNT

The three elements to be addressed under the Grant include the preparation of wetland development standards; the purchase of aerial photograph mylars and a review of the Navy Carrier Task Force EIS for impacts of Island County.

ELEMENT I

The first element involves two parts: the marshes, bogs and swamps within shoreline jurisdiction were to be evaluated and then the Shoreline Master Program would be amended to include protective development standards regarding such systems. The evaluation of marshes, bogs and swamps within shoreline jurisdiction was undertaken at three levels. First of all, literature available on particular wetland areas was compiled. This information came from published documents, and shoreline permit files. The second step entailed individual wetland evaluations both on Camano and Whidbey Islands. Finally, the consulting firm, Shapiro and Associates sent two wetland ecologists into the field and their reports were included to serve as an introduction and an overall evaluation of the marshes, bogs and swamps in Island County.

These materials are submitted herewith. It should be noted that while this information does give a picture of wetland types and conditions that one can encounter in Island County, it is not considered a completed document.

As additional wetland evaluations are done, they will be included in this report. It is hoped that eventually all the marshes, bogs and swamps will be delineated on aerial photos, mapped and evaluated. additional information, such as Shoreline Hearings Board decisions affecting a wetland or reports prepared for individual wetlands can be included as well.

In terms of the wetland amendments, the evaluations have served to give us an idea of the diversity and conditions one can expect. While these thoughts and observations have not been worked into the amendments at this time, they will be of benefit when the fine tuning begins.

US Department of Commerce  
NOAA Coastal Services Center Library  
2234 South Hobson Avenue  
Charleston, SC 29405-2413

The amendments themselves are included as a separate document. The work represents the most preliminary of drafts. It is being used as a starting platform from which the work of evaluating and assessing their acceptability will begin. Already, staff has begun editing and formulating discussion. The point is we have something to work with. Once the draft is corrected and the major issues/conflicts fleshed out, we will be convening the Island County Shorelines Advisory Committee and beginning the public review process. What will follow will be consultation with the Department of Ecology, public workshops, and an environment threshold determination subsequent to SEPA. Once formulated, the amendments will go to the Planning Commission with an recommendation from the Shorelines Advisory Committee. They in turn will hold public hearings and formulate a recommendation which will go to the Board of County Commissioners. The Board's decision, after public hearing, will be forwarded to the Department of Ecology for final approval. It will be a long process, but at least it has begun.

#### ELEMENT II

This purchase of the aerial photographs was completed in June of 1986. At first, it did not appear as though the County would be able to finance the local match. However, upon finding that the Planning Department had a definite need for the aerals, the Board of County Commissioners agreed to awarding a contract for services. These aerial mylars are now in the possession of the Island County Planning Department. There are 323, each representing a Section , at a scale of 1" = 200'.

Please note that the Grant agreement says 1" = 100'. This is not correct as one original proposal indicated a scale of 1" = 200'. Further, it is important to note that the cost of this purchase is listed under Materials/Supplies heading in the budget. While this may be appropriate, it may also be more accurate to include it under Contractual Services.

In any event, the mylars are reproducible, but the cost of doing so would be exorbitant, and would far exceed the dollar provisions of this element. For this reason, copies are not included herewith, although they are noted as an exhibit.

#### ELEMENT III

This portion of the Grant was to enable the County to participate in the Navy Homeporting environmental review. In response to the Department of Ecology's request for comments regarding the adequacy of the NEPA FEIS, staff prepared a report and gave oral testimony at a public hearing in Everett. This report is included here as an exhibit. In addition, a time sheet is enclosed, documenting staff

activity with respect to this issue. It should be noted, that while little attention was given to Island County in this process, a recent report entitled, The Demand for Private Housing, (as a result of the Navy Homeporting facility) includes South Whidbey and North Camano in the 60-minute commute zone. This means that these areas of Island County can expect to be impacted by an increased demand for certain kinds of housing should the Navy succeed in gaining approval for its proposal. It would appear that Island County's participation in this process has at least yielded some recognition of our concerns.

What follows is the financial summary for the Grant year. Please note, that none of the project allowances were exceeded. However, there is considerable difference in the allocation of these funds within each budget item. It is hoped that the final outlay will pose no problems for your accounting or payment procedures.

Following the Financial Summary is a listing of all materials prepared under Grant #G0086036 is provided.



COASTAL ZONE MANAGEMENT  
GRANT #G0086036  
PROJECT COMPLETION REPORT

ELEMENT I

	BUDGET	FINAL COST BREAKDOWN
Salaries	\$ 700.00	\$ 1,902.43
Benefits	110.00	418.76
Materials/Supplies	820.00	-0-
Travel	550.00	169.70
Indirect Costs	50.00	190.25
Printing/Mailing	370.00	-0-
Telephone	-0-	-0-
Contractual Services	10,400.00	10,161.58
Total	<u>\$13,000.00</u>	<u>\$12,842.72</u>

ELEMENT II

	BUDGET	FINAL COST BREAKDOWN
Salaries	\$ -0-	\$ -0-
Benefits	-0-	-0-
Materials/Supplies	13,687.00	13,315.00
Travel	-0-	-0-
Indirect Costs	-0-	-0-
Printing/Mailing	-0-	-0-
Telephone	-0-	-0-
Contractual Services	-0-	-0-
Total	<u>\$13,687.00</u>	<u>\$13,315.00</u>

ELEMENT III

	BUDGET	FINAL COST BREAKDOWN
Salaries	\$4,000.00	\$ 984.39
Benefits	880.00	216.57
Materials/Supplies	343.00	-0-
Travel	450.00	-0-
Indirect Costs	400.00	-0-
Printing/Mailing	-0-	42.80
Telephone	150.00	-0-
Contractual Services	-0-	-0-
Total	<u>\$6,223.00</u>	<u>\$1,342.20</u>

COASTAL ZONE MANAGEMENT

GRANT #G0086036

PROJECT COMPLETION REPORT

LISTING OF ALL MATERIAL PREPARED UNDER GRANT #G0086036

- Exhibit A: Island County - Marshes, bogs and swamps under Shoreline jurisdiction.
- Exhibit B: Preliminary Draft of Shoreline Master Program Amendments Protective Standards for Marshes, Bogs and Swamps.
- Exhibit C: 1985 aerial photographs, scale 1" = 200' reproducible mylars (323 individual aerials)
- Exhibit D: Letter dated 9/18/85 to the City of Everett Planning Director, Dennis Derickson and Joan Thomas of the Department of Ecology regarding the adequacy of the Final Environmental Impact Statement prepared for the Navy Homeporting facility in Everett.
- Exhibit E: Time Sheet regarding other activities to Element III

DEPT. OF ECOLOGY  
SHORELANDS PROGRAM  
OLYMPIA, WASH.

'86 JUL 21 A8:51

EXHIBIT D

Letter to the City of Everett and the Department of Ecology regarding the adequacy of the Final Environmental Statement prepared for the Carrier Battle Group - Homeporting Facility in Everett.

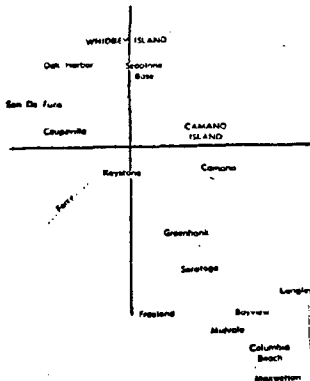
ISLAND COUNTY PLANNING DEPARTMENT

September 18, 1986

The preparation of this report was financially aided through a grant from the Washington State Department of Ecology with funds obtained from the National Oceanic and Atmospheric Administration and appropriated for Section 306b of the Coastal Zone Management Act of 1972.

GRANT #G0086036: ELEMENT I

1986



## ISLAND COUNTY PLANNING DEPARTMENT

P.O. BOX 698 COUPEVILLE, WASHINGTON 98239

PHONE 679-7339

678-5111

321-5111

629-4522

September 18, 1985

Mr. Dennis Derickson, Planning Director  
City of Everett  
3002 Wetmore  
Everett, Washington 98206

Ms. Joan Thomas  
Department of Ecology  
4350 150th Northeast  
Redmond, Washington 98052

Re: Adequacy of the Final Environmental Statement Prepared  
for the Carrier Battle Group - Homeporting Facility:  
Everett

Dear Ms. Thomas and Mr. Derickson:

Your offices are currently considering the adequacy of the  
above referenced FEIS for adoption as the appropriate SEPA  
document.

Island County has some concern that the existing  
environmental review fails to take into account possible  
affects this project may have on South Whidbey and Camano  
Islands.

Earlier this year, we responded to the following statement  
which appeared in the Draft EIS:

"No military or civilian employees are projected  
to live on Whidbey and no official traffic to the  
Whidbey Naval Air Station is expected on a regular  
basis."

Our comments were based on some preliminary research which  
showed that 4% of the 6,200 Boeing employees working at Paine  
Field in Everett, listed Whidbey Island as a mailing address.  
An additional 4% were found to live on Camano. The total  
came to 450 working individuals.

For the purposes of discussion, we pointed out that if only 4% of the 22,725 people projected to live in the community as a result of the Homeporting facility, located in South Whidbey, then we would expect a population increase of 909 individuals. The same would be true of Camano.

An example of what this may mean in terms of an impact can be roughly determined if one speculates that half of the 909 individuals are school aged children. This would result in the need to accommodate 455 students. The school superintendent of South Whidbey previously indicated they could absorb 200 more students before expansion will be necessary.

Please recognize, these figures are rough, and may or may not be appropriate. Our goal was merely to alert the Navy to the possibility of impacts and which we believed deserved a closer analysis.

The response in the FEIS (VI-121) was brief and to the point.

"There is no apparent reason to suggest that less accessible places such as Whidbey Island will be significantly impacted by project related population growth. It is expected that Navy personnel will cluster in areas readily accessible to the Homeporting facility, and secondarily, Naval Air Station, Seattle, as well as locations with affordable housing. A direct comparison with the locational preferences of Boeing employees ignores the fact that Paine field is considerably closer to the Mukilteo ferry terminal, and that Boeing employees tend to have relatively higher incomes."

There are three points raised in this statement which have some bearing on the discussion at hand.

First, the point is made that Whidbey Island is less accessible than areas around Everett. In fact, Whidbey Island was assigned an unacceptable propensity index so it would drop out of the Forecast Analysis Zone (FAZ). This was done upon the assumption that Whidbey Island was outside the 60 minute commute radius.

The fact is, parts of South Whidbey and Camano Island are within 60 minutes of downtown Everett. Further, the requirement that Navy personnel live close to base does not apply to civilian populations that are expected to come into the area as a result of this project.

Second, it is stated that people will "cluster in areas readily accessible to the Homeporting facility, and secondarily Naval Air Station, Seattle, as well as locations with affordable housing."

It should be noted that not only are South Whidbey and Camano clearly accessible to Everett but they are also within an hour's drive of the Naval Air Station, Whidbey, in Oak Harbor.

Navy personnel are expected to use the Commissary and service centers provided at Sand Point. Traffic, parking and congestion created by increased use of these facilities may cause individuals to find the Whidbey/Camano alternative much more attractive. Living in South Whidbey or Camano, Navy personnel can drive to Oak Harbor, without any traffic on the way or parking difficulties when they get there.

In addition, people who are trying to locate affordable housing are likely to find the Island market more amenable than the mainland. This will be particularly true when the projected housing shortage hits the Everett area. No doubt the contractors in Island County will respond to this demand in a fairly predictable manner.

It should be noted that the priority of locational preference given in this response is contradicted by a statement made on page IV-214.

"Although most of the family services provided by the Navy would be located at Naval Station, Seattle, availability and affordability of housing outside of Everett and Seattle are expected to have a greater influence on residential location decisions than proximity to the base and family service centers."

It appears, that South Whidbey and Camano meet all these criteria in a satisfactory manner and thereby cannot be excluded from consideration or discussion.

The third item in the FEIS response discounts our concern because Paine Field is considerably closer to the ferry terminal in Mukilteo and Boeing employees tend to earn more money than Navy personnel.

Note here, the assumption is that it is going to cost more to live on Whidbey than the mainland. If this determination was based on the cost of the ferry commute then the fact that many people walk-on, using public transportation or private cars once they reach the mainland, should be a factor.

At this time the fare is \$12.00 for ten (walk-on) round trips or \$1.20 per day.

Finally, while Navy personnel may earn relatively lower salaries than Boeing employees, the FEIS does state:

"All personnel receive salaries that place them above the very low income level as defined by H.U.D.

In addition, not all people who may choose to locate in Island County will be military related. A certain percentage of the 10,310 indirect civilian population can be expected to as well. These individuals may well have salaries comparable to Boeing employees."

From the above, it should be clear that the FEIS dismisses Island County's concerns without any real consideration of the facts. No one looked into the commuter population, land-values or the real likelihood NAS Whidbey may prove more accessible than NAS Seattle.

Some data is readily available. U.S. Census 1980 found that 814 residents of South Whidbey commute out of the County. This constitutes 32% of the workers in that area, 16 years and older. Interestingly, 77 of these said they traveled between 45 and 60 minutes to work while 722 commuted over 60 minutes to work.

Camano figures are even higher. 1,224 commute out of the County (71% of the Island's work force) with 264 traveling 45-60 minutes and 385 over 60 minutes to work.

W.S.U. Census Data Coordinator, Anabel Kirschner Cook, points out that suburban growth in the Seattle/Everett metropolitan area has spilled over into Island County. She estimates 45% of Island County's commuters work in Snohomish County and an additional 22% work in King County. In a paper discussing Island County's changing population, Ms. Cook states:

"Finally, the County is increasingly tied to the Seattle/Everett metropolitan area as a greater percent and number of the labor force commutes to that area for jobs. The increasing size of that adjacent metropolitan area means this trend will probably continue." (Article enclosed)

With the infusion of 22,725 individuals into the Everett area as a result of the Homeporting facility, there is likely to be an impact on Island County. To date, we have not been given information with which to assess these effects.

Currently planning is underway to develop concepts for Urban Business Centers around Freeland and Clinton. A Zone of Influence is being implemented around Langley through agreements between the county and that incorporated body. We are also working cooperatively with the D.O.E., D.S.H.S., and local citizens to develop a water management plan for Island County which has been designated a sole source aquifer by the



County which has been designated a sole source aquifer by the E.P.A. Essentially, all this is being done with the expectation of growth, but the Navy facility in Everett has not been factored into the equation.

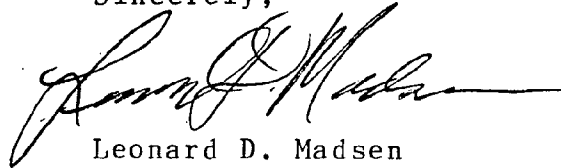
As Lead Agency, the Department of Ecology must determine whether the proposed project will have probable significant long term adverse impacts. We do not believe you can make a determination in this case as the FEIS is not adequate.

More information and analysis should be done before one can determine whether or not the infrastructure in Island County can absorb a projected increase. If not, we need to know where the problems and/or opportunities may be and where possible we need to address potential problems now.

We appreciate your responsibility as Lead Agency under SEPA and would be willing to work closely with you in developing supplemental information to adequately address the impacts of this project.

Thank you for the opportunity to comment on this document.

Sincerely,



Leonard D. Madsen  
Planning Director

LDM:sg

Enclosures

cc: Admiral L.S. Severence, Commander, Naval Base, Seattle  
Board of Island County Commissioners  
Richard Thompson, Director, Washington State  
Department of Community Development  
South Whidbey School District  
Stanwood School District

1980 CENSUS DATA FOR ISLAND CO. PROVIDED BY  
COOPERATIVE EXTENSION, WASHINGTON STATE UNIV.

AREA: CAMANO

PLACE OF WORK--STATE AND COUNTY LEVEL UNIVERSE: WORKERS 16 YEARS AND OVER

	NUMBER	PERCENT
WORKED IN STATE OF RESIDENCE:		
WORKED IN COUNTY OF RESIDENCE	356	20.7
WORKED OUTSIDE COUNTY OF RESIDENCE	1224	71.2
WORKED OUTSIDE STATE OF RESIDENCE	0	.0
NOT REPORTED	140	8.1

TRAVEL TIME TO WORK

UNIVERSE: WORKERS 16 YEARS AND  
OVER WHO DID NOT WORK AT HOME

YEARS OF SCHOOL COMPLETED

UNIVERSE: PERSONS 25 YEARS OLD  
AND OVER

	NUMBER	PERCENT		NUMBER	PERCENT
LESS THAN 5 MINUTES	42	2.6	ELEMENTARY (0-8YRS.)	456	12.0
5 TO 9 MINUTES	157	9.6	HIGH SCHOOL:		
10 TO 14 MINUTES	135	8.2	1 TO 3 YRS.	442	11.7
15 TO 19 MINUTES	251	15.3	4 YRS.	1516	40.1
20 TO 29 MINUTES	155	9.5	COLLEGE:		
30 TO 44 MINUTES	248	15.1	1 TO 3 YRS.	687	18.2
45 TO 59 MINUTES	264	16.1	4 OR MORE YRS.	684	18.1
60 OR MORE MINUTES	385	23.5			

INDUSTRY UNIVERSE: EMPLOYED PERSONS 16 YEARS  
AND OVER

	NUMBER	PERCENT
AGRICULTURE, FORESTRY, FISHING, MINING	63	3.8
CONSTRUCTION	201	12.3
DURABLE GOODS MANUFACTURING	58	3.5
NONDURABLE GOODS MANUFACTURING	243	14.8
TRANSPORTATION	61	3.7
COMMUNICATIONS AND OTHER PUBLIC UTILITIES	19	1.2
WHOLESALE TRADE	105	6.4
RETAIL TRADE	288	17.6
FINANCE, INSURANCE AND REAL ESTATE	122	7.4
BUSINESS AND REPAIR SERVICES	66	4.0
PERSONAL, ENTERTAINMENT, RECREATION SER.	92	5.6
HEALTH SERVICES	84	5.1
EDUCATIONAL SERVICES	92	5.6
OTHER PROFESSIONAL AND RELATED SERVICES	80	4.9
PUBLIC ADMINISTRATION	64	3.9

POVERTY STATUS UNIVERSE: PERSONS FOR WHOM POVERTY  
STATUS IS DETERMINED

	NUMBER	PERCENT
ABOVE POVERTY LEVEL	4657	92.5
BELOW POVERTY LEVEL	375	7.5

1980 CENSUS DATA FOR ISLAND CO. PROVIDED BY  
COOPERATIVE EXTENSION, WASHINGTON STATE UNIV.

AREA: SOUTH WHIDBEY  
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PLACE OF WORK--STATE AND COUNTY LEVEL UNIVERSE: WORKERS 16 YEARS AND OVER  
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	NUMBER	PERCENT
WORKED IN STATE OF RESIDENCE:		
WORKED IN COUNTY OF RESIDENCE	1481	58.2
WORKED OUTSIDE COUNTY OF RESIDENCE	814	32.0
WORKED OUTSIDE STATE OF RESIDENCE	29	1.1
NOT REPORTED	220	8.6

TRAVEL TIME TO WORK  
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UNIVERSE: WORKERS 16 YEARS AND  
OVER WHO DID NOT WORK AT HOME

	NUMBER	PERCENT
LESS THAN 5 MINUTES	194	7.9
5 TO 9 MINUTES	366	14.9
10 TO 14 MINUTES	448	18.3
15 TO 19 MINUTES	329	13.4
20 TO 29 MINUTES	132	5.4
30 TO 44 MINUTES	181	7.4
45 TO 59 MINUTES	77	3.1
60 OR MORE MINUTES	722	29.5

YEARS OF SCHOOL COMPLETED  
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UNIVERSE: PERSONS 25 YEARS OLD  
AND OVER

	NUMBER	PERCENT
ELEMENTARY (0-8YRS.)	346	7.2
HIGH SCHOOL:		
1 TO 3 YRS.	500	10.5
4 YRS.	1891	39.6
COLLEGE:		
1 TO 3 YRS.	1208	25.3
4 OR MORE YRS.	830	17.4

INDUSTRY UNIVERSE: EMPLOYED PERSONS 16 YEARS  
AND OVER  
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	NUMBER	PERCENT
AGRICULTURE, FORESTRY, FISHING, MINING	143	5.2
CONSTRUCTION	430	15.6
DURABLE GOODS MANUFACTURING	28	1.0
NONDURABLE GOODS MANUFACTURING	487	17.7
TRANSPORTATION	167	6.1
COMMUNICATIONS AND OTHER PUBLIC UTILITIES	49	1.8
WHOLESALE TRADE	66	2.4
RETAIL TRADE	524	19.1
FINANCE, INSURANCE AND REAL ESTATE	187	6.8
BUSINESS AND REPAIR SERVICES	49	1.8
PERSONAL, ENTERTAINMENT, RECREATION SER.	91	3.3
HEALTH SERVICES	151	5.5
EDUCATIONAL SERVICES	202	7.4
OTHER PROFESSIONAL AND RELATED SERVICES	104	3.8
PUBLIC ADMINISTRATION	70	2.5

POVERTY STATUS UNIVERSE: PERSONS FOR WHOM POVERTY  
STATUS IS DETERMINED  
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	NUMBER	PERCENT
ABOVE POVERTY LEVEL	6584	91.9
BELOW POVERTY LEVEL	582	8.1

## ISLAND COUNTY'S CHANGING POPULATION

### Introduction

The population of Island County is changing in different ways and for different reasons. Some of these changes are due to the fact that the county's population has grown quite rapidly and consequently new people have moved to the area. Other changes are due to broad national trends which are occurring here too.

Whatever the source of change, it is important to be aware of the demographic changes occurring in a local area. Changes in an area's population will increase the need for certain types of facilities and services, and may reduce the need for others. In an era of tight budgets, careful planning for all of a county's different groups is essential. A knowledge of how the community's population is structured and how it is changing is one important element of such planning.

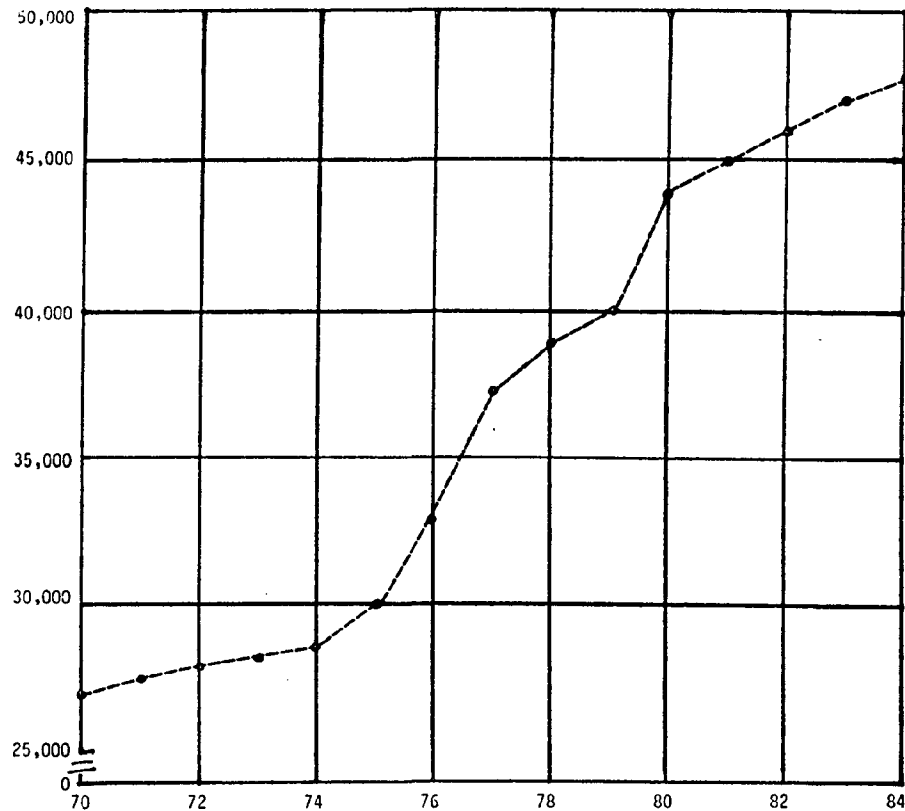
This report looks at population growth in Island County, and where this growth has occurred, both geographically in terms of the county's age structure. It also covers three national trends and how they are reflected here: the growth of single parent families, women in the labor force, and changing characteristics of the poverty population.

### Growth of County Population

The population of Island County has grown rapidly for several decades increasing by 37.5 percent between 1960 and 1970, and by 63.1 percent between 1970 and 1980. This growth slowed recently as has population growth for the state as a whole. Figure 1 shows the number of people in Island County since 1970 and depicts the period of very rapid growth between 1974 and 1980 and the slowing of growth since that time. However, the county's population is still growing more rapidly than the state's as a whole. Between 1980 and 1984, Island County's population grew by just under 8 percent compared to an increase of 4.7 percent for the state.

Geographically, all parts of the county have shared in this growth. Figure 2 shows the four major Census County Divisions (CCDs) for Island County in 1980. The North Whidbey and Camano Island Divisions were the same in both 1970 and 1980. The boundary between the Central and South Whidbey Divisions was somewhat further north in 1970 than in 1980. However, for purposes of comparison these two CCDs are treated as equivalent for 1970 and 1980. As Figure 2 shows, all CCDs gained population in the last decade. The populations of the Central Whidbey and Camano CCDs nearly or more than doubled during that time. Because they grew more rapidly than the county as a whole, the percent of the county's population living in each CCD increased. The largest number of people, 8,894, was added to the North Whidbey CCD increasing that area's population by 53 percent between 1970 and 1980. Just over half of the county's population lived in that CCD in 1980, but that was down from 62 percent in 1970. South Whidbey's population also increased by 53 percent, as that area added 2,512 persons during the decade.

Figure 1. Growth of Island County's Population: 1970-84



Source: Population Trends for Washington (1970-1984). Olympia, WA: Office of Financial Management.

FIGURE 2. POPULATION OF ISLAND COUNTY CCD's: 1970 and 1980

County Division	Total Population		% of Population		Change 70--80	
	1970	1980	70	80	%	#
North Whidbey	16,641	25,535	62	53	53	8,894
Central Whidbey	2,993	6,144	11	14	109	3,151
South Whidbey	4,777	7,289	18	17	53	2,512
Camano	2,600	5,080	10	12	95	2,480
Island County	27,011	44,048	--	--	63	17,037

Source: 1970 and 1980 Census of Population for Washington, Ch. A. Washington, D.C.: U. S. Government Printing Office

Much of the growth in the county's population has occurred outside of its incorporated towns -- Coupeville, Oak Harbor, and Langley. In 1970, 61.4 percent of the population lived in unincorporated areas. By 1980, this had grown to 68.1 percent. Population estimates since that time indicate that

nearly 71 percent of the county's population lived in unincorporated areas in 1984.

The cost of many county or community services is affected by this more dispersed residential pattern. Police and fire protection must cover a much broader area making rapid responses to emergencies more difficult. More roads and bridges must be built and maintained. Children are more likely to live great distances from existing schools necessitating the building of new schools or extensive busing.

With this kind of residential pattern, there is more reliance on septic tanks since the building of sewer systems can be very expensive. This creates the possibility of greater pollution of ground water supplies and aquifers and thus the contamination of drinking water supplies. When there is substantial amounts of waterfront building there is the increasing possibility of pollution of lakes and salt water areas.

Finally with the growth of unincorporated areas, the rural environment is increasingly shared by two different groups of people. There are those who live there because of lifestyle preferences and who earn a living elsewhere and those who make a living out of the rural environment through agriculture, ranching, forestry or fishing.

Because these two groups are using the rural environment for different reasons and in different ways, controversies may evolve over broad issues such as zoning and taxing or over seemingly more trivial issues such as weed control and the use of pesticides and herbicides. Since there is no evidence that this trend will change, persons who live in unincorporated areas out of preference and those who reside there to earn a living can look forward to an extended period of necessary accommodation.

What about future growth in Island County? Making demographic predictions is always difficult. In fact, a demographer once called such predictions "the art of always being wrong." But there are a number of reasons for believing that the county's population will continue to grow and that this growth will be faster than what is predicted for the state.

First, growth will continue in the Puget Sound region. Forecasts made by the National Planning Association show that the Olympia metropolitan area (i.e., Thurston County) will be the fastest growing metropolitan area in the nation between 1980 and 2000. These also show that the Bremerton metropolitan area (i.e., Kitsap County) will be the ninth fastest growing metropolitan area during that time. This growth is in terms of the percent

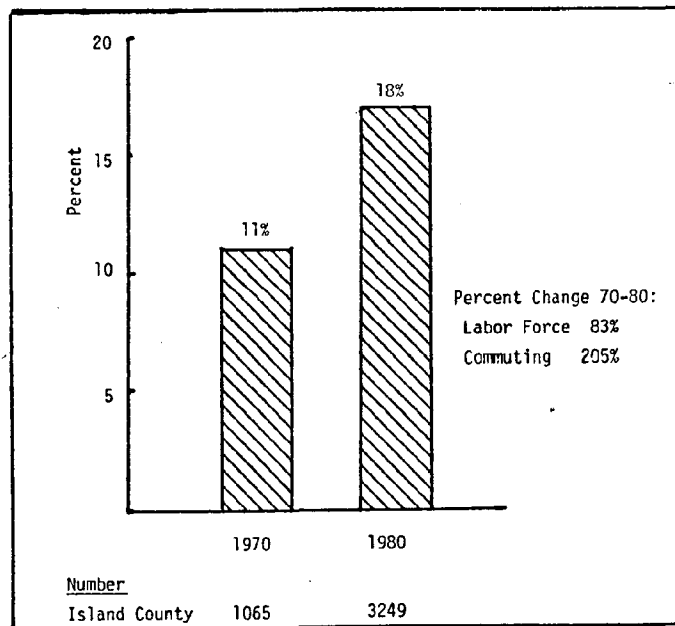
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<sup>1</sup> Although Ault Field represents a sizeable concentration of people, because it is not incorporated it is counted as part of the unincorporated population. However the Census does list it as a Census Designated Place with a population of 1,478 in 1970 and 2,553 in 1980. If these figures are taken out of the unincorporated population for those years, the percent of the county's population living in unincorporated areas changes to 56 percent in 1970 and to 63 percent in 1980. The Office of Financial Management, which makes intercensal estimates for incorporated places, does not provide estimates for Census Designated Places.

change in overall numbers, and because these are relatively small metropolitan areas, it is easier for them to have large percent changes. Closer to Island County, the same group predicts that the Seattle-Everett metropolitan area (i.e., King and Snohomish counties) will rank fifteenth in the nation in terms of the total number of people added in those twenty years.<sup>2</sup> Some of this growth is likely to spill over onto Island County as suburbanization spreads outwards and/or as persons look for areas to build second homes.

The 1980 Census indicates that suburbanization is already happening in the county. As Figure 3 shows, the number and percent of the persons in the labor force commuting from Island County to a different county increased substantially in the last decade. In 1970, only 11 percent of the labor force commuted out of the county, by 1980 this had increased to 18 percent. The percent change is even greater. Although the labor force of Island County grew by 83 percent, the number of working people commuting increased by 205 percent. Most of these commuters went to work in the Seattle-Everett metropolitan area. In 1980, an estimated 45 percent of Island County's commuters worked in Snohomish County, an additional 22 percent worked in King County.

FIGURE 3. PERCENT AND NUMBER OF ISLAND COUNTY LABOR FORCE COMMUTING TO A DIFFERENT COUNTY: 1970 and 1980



Source: 1970 and 1980 Census of population for Washington, Ch. C.  
Washington, D.C.: U. S. Government Printing Office

There are other reasons to believe that Island County's population will continue to grow in addition to its being adjacent to a large and growing

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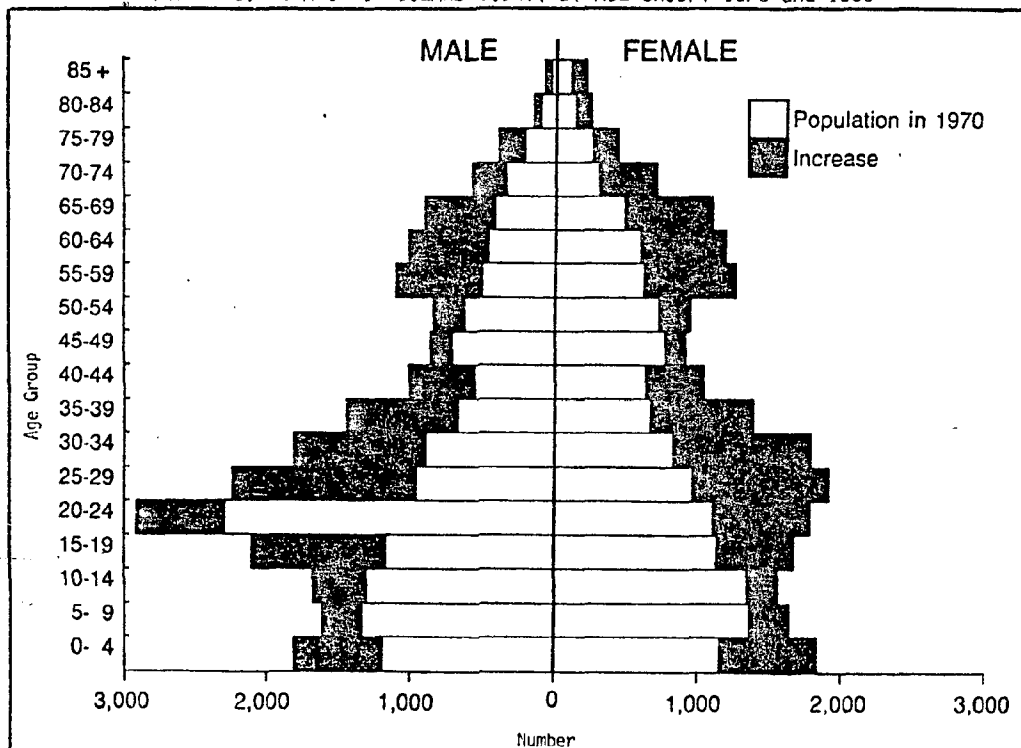
<sup>2</sup>"Prospects for Metropolitan Growth" by Martin Holdrich, pp. 33-37, American Demographics; April, 1984.

metropolitan area. These other forces for growth in the area are tied to the changes that took place in Island County's age structure in the last decade.

### Island County's Age Structure

Changes in an area's age structure are extremely important because so much of what we need and what we do is tied to our age. Figure 4 shows the number of males and females in each five year age group in 1970 and changes between then and 1980. One of the things that is most noticeable about the area's age structure is the large number of males in the 20 to 24 year old age group. This is due to the fact that there is a military installation in the county. Also noticeable is the fact that there were increasing numbers of people in every age group, but the increases were greater for some age groups than for others.

FIGURE 4. POPULATION CHANGE IN ISLAND COUNTY BY AGE GROUP: 1970 and 1980



Source: 1970 and 1980 Census of Population for Washington, Ch. B. Washington, D.C.: U.S. Gov. Printing Office

### Young Adults and Their Children

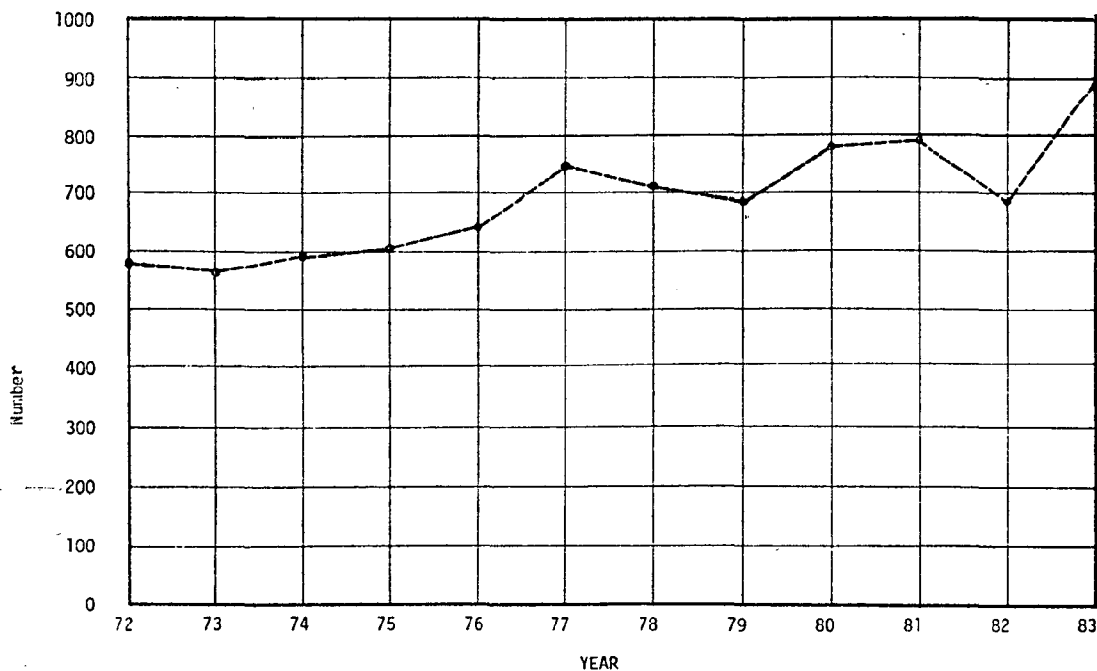
There were substantial increases in the number of young adults (those persons 25 to 35 years old) in the last decade. In that period their numbers more than doubled increasing by 109 percent. Young adults are the segment of the United States population who are most likely to move. So any time an area is growing rapidly through immigration, it is likely to be receiving a substantial number of young adults. In the last decade, 75 percent of the growth that occurred in Island County was due to immigration -- people from other areas choosing to move to the county.



The fact that there are a large number of young adults in the area's population means that there is what demographers like to call a "built in momentum" for growth in the area's age structure. Young adults are also the segment of the United States's population most likely to have children. In some cases young adults will bring their children with them when they move. In all cases, they bring with them their propensity to have children. This means that the number of young children in the county should continue to grow for some time to come. Consequently, the need for services used by children will continue to grow too. Of course, the most important service is the school system, but there will also be growing needs for recreational programs, day care, and obstetric and pediatric medical services.

Given the need to anticipate the growth in this age group, for adequate provision of these services, it is important to keep track of how their numbers are changing as much as possible. One way of doing this is by looking at the number of births in the county over time. This information comes from the state's Health Statistics Division in the Department of Social and Health Services and is issued yearly. Figure 5 shows that the number of births has increased but this increase has been somewhat erratic. Between 1972 and 1976 the number of births in Island County fluctuated around 600 a year. Between 1977 and 1980, it fluctuated around 700 a year. Then the number of births increased to 800 a year in 1980 and 1981, fell to 700 in 1982, and rose to 900 in 1983. It is impossible to tell if this rise to 900 births in 1983 will continue or if the number of births in the area will drop somewhat once the 1984 figures are out. But the overall trend -- an increasing number of births in the county -- is clear.

FIGURE 5. NUMBER OF BIRTHS IN ISLAND COUNTY; 1970 to 1983



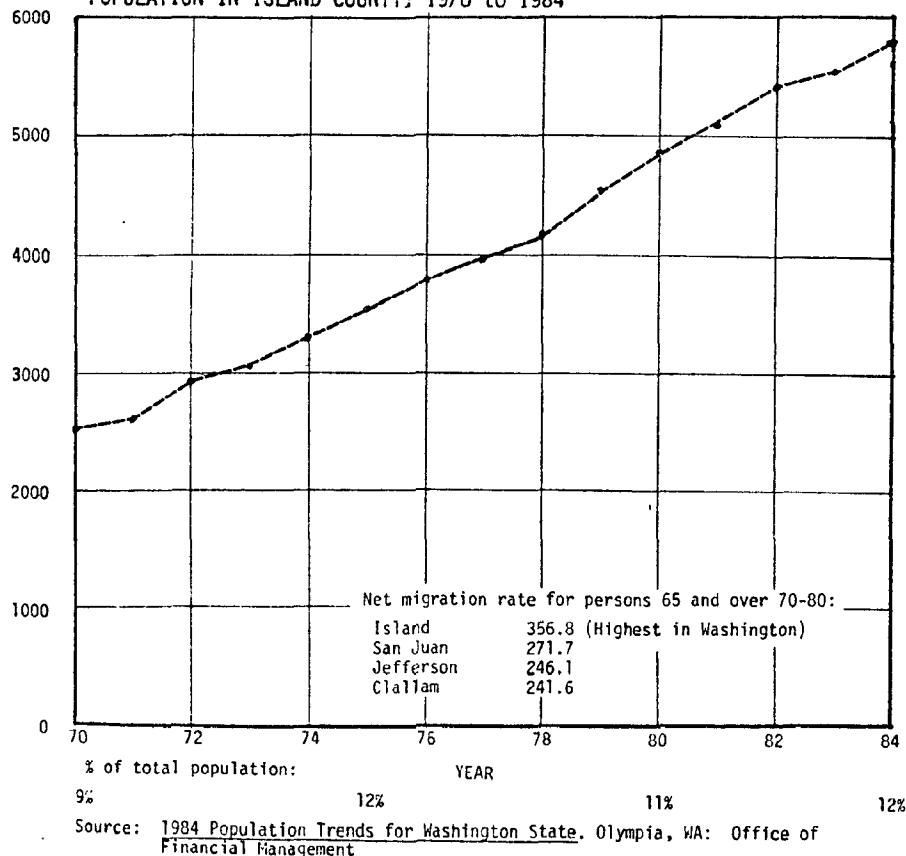
Source: 1972-1982 Vital Statistics Summaries for Washington. 1983--Phone conversation with Center for Health Statistics, Dept. of Social and Health Services. Olympia, WA.

## Retirement Age Population

Looking back at Figure 4 we can also see that there was a very large increase in the number of people between 55 and 69 years of age in the last decade. In fact, the number of persons in these age groups increased by 108 percent during that time. Some of this increase was due to persons in younger age groups "aging" into these older ages, but some of the increase was due to migration into the county of older persons.

The Office of Financial Management provides yearly estimates of the numbers of persons 65 and older in each county based on information from Social Security recipients. Figure 6 shows that in Island County the number of persons 65 and older has increased steadily since data were available in 1970. Estimates of net migration to the county for the 65 and older population in the last decade are also available than these show that Island County had the highest net immigration of retirement age people of any county in the state.

FIGURE 6. NUMBER OF PERSONS 65 AND OVER AND PERCENT OF TOTAL POPULATION IN ISLAND COUNTY; 1970 to 1984



The bottom of Figure 6 shows the percent of the total population which is 65 and over in Island County. This has increased since 1970, but most of the increase occurred between 1970 and 1975. Since that time although the number of people 65 and over has increased steadily, the percent of the population 65 and over has remained at between 11 and 12 percent because the number of people in other age groups has also increased.

Zoning changes, limits on development or other forces that lead to rapid increases in land or housing costs could slow this growth of the retirement age population in the county. But otherwise we would expect to see the number of persons 65 and older continue to increase given the attractiveness of the area for retirement migration, and the fact that increasingly larger percentages of the United States's population will be in this age group.

### National Trends

These changes in the area's population are occurring because of continued population growth and the types of people who choose to move to Island County. In addition, a number of national trends are also having an impact on the county's population. This report will cover three well-known trends briefly: single parent families, women in the labor force and changing characteristics of the poverty population.

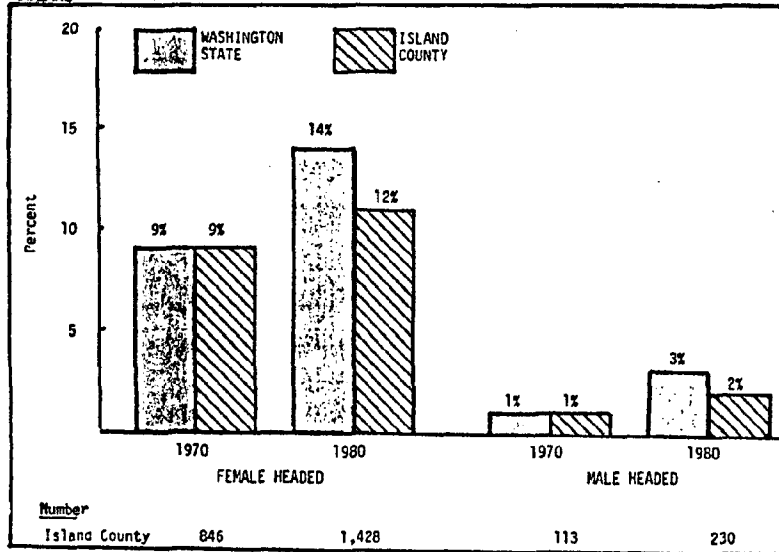
#### Single Parent Families

Nationally we know that increasing numbers of children are living with just one parent because of the high divorce rates of the last decade. In fact one study estimated that 59 percent of the children born in 1983 would spend some time in a single parent family before they reach the age of 18. The experience of living in such a family will be temporary for many as their parent remarries. But the normal family experience for children born today will no longer be one of being raised by the same parents throughout childhood.

Looking at the living arrangements of children at specific points in time understates the experience children have with single parent families, but it does give an idea of how national changes are occurring in an area like Island County. Figure 7 shows the percent and number of children in both male and female headed, single parent families in 1970 and 1980. These percent distributions are compared with the state. This shows that the percent of children in single parent families has increased in both the county and the state, but the increases have been somewhat greater for the state. However, if we look at the number of children in single parent families in the county, we can see that this has almost doubled in part because there has been a large increase in the number of children in the area overall.

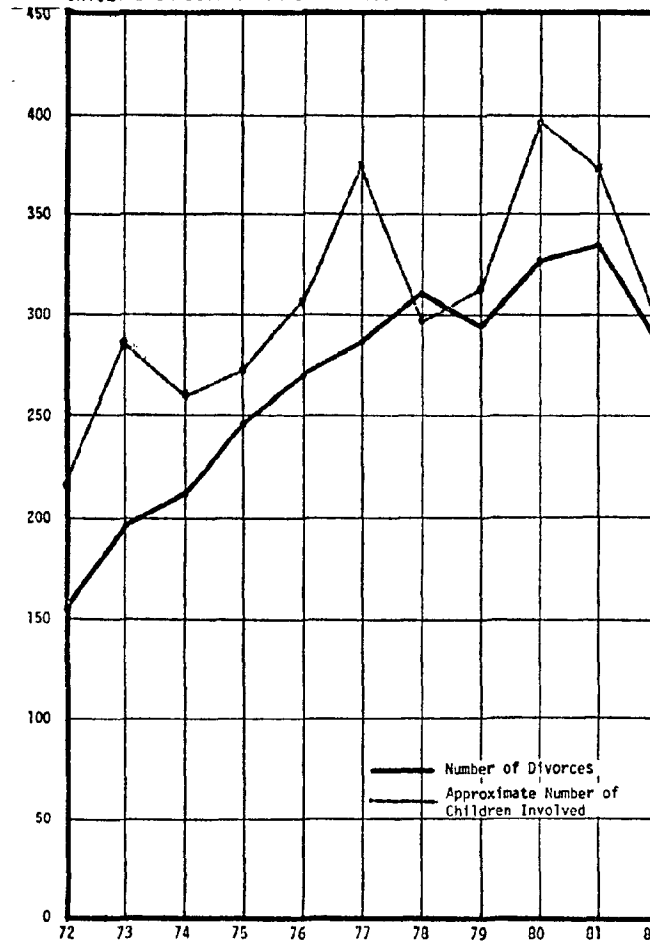
Information on the number of divorces and the approximate number of children involved in divorce are available on a yearly basis for counties. Figure 8 shows that there was a steady increase in these in Island County until the late 1970s, a downturn in 1978 followed by a rise to 1980 and another downturn. However, since 1980, close to or over 300 children a year have been involved in divorce. The downturn in the number of divorces and hence the number of children involved in divorce may be temporary and linked to the recent, recessionary period of the early 1980s. The divorce rate generally declines during such periods as families cannot afford to divorce when the economy is bad. Such periods are usually followed by increases in the number of divorces.

FIGURE 7. PERCENT AND NUMBER OF CHILDREN LIVING IN SINGLE PARENT FAMILIES  
ISLAND COUNTY AND WASHINGTON STATE: 1970 and 1980



Source: 1970 and 1980 Census of Population for Washington, Ch. B.  
Washington, D.C.: U.S. Government Printing Office.

FIGURE 8. NUMBER OF DIVORCES AND APPROXIMATE NUMBER OF CHILDREN  
INVOLVED IN DIVORCE IN ISLAND COUNTY: 1972 to 1982



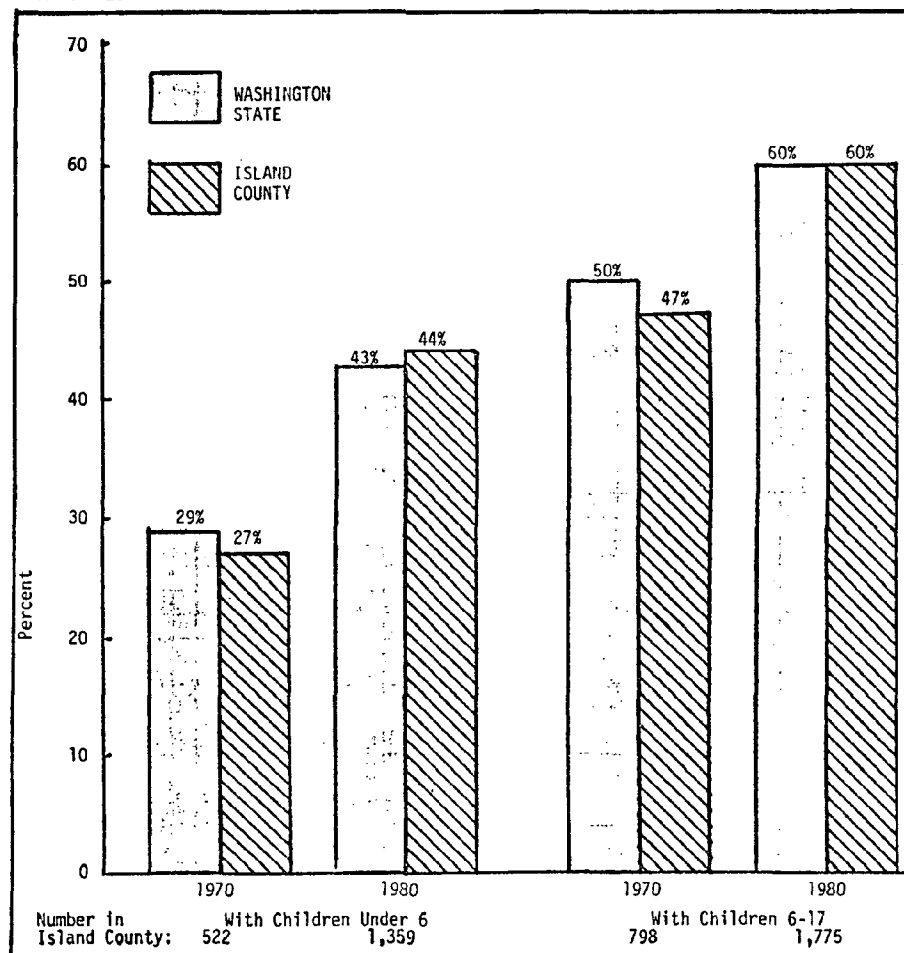
Source: 1972-1982 Vital Statistics Reports for Washington, Olympia, Wa.:  
Department of Social and Health Services.

Once the adjustment to a new living arrangement has been made, children are often happier living with one parent than with both when there is a great deal of tension and conflict between the parents. But the period of adjustment can be hard for children. Many blame themselves for the divorce and school work and relationships with peers can suffer. Given the prevalence of divorce many school districts have initiated counseling groups for children involved in divorce. It is especially important for teachers to be aware of the impact a divorce may have on school performance.

### Women in the Labor Force

One of the most striking and unanticipated trends of the last decade was the entry of large numbers of women, especially those with small children, into the labor force. In Figure 9 we can see that this happened in Island County, too. In 1970 only 27 percent of the county's women with children under 6 were in the labor force. By 1980 this had increased to 44 percent. As the figures at the bottom of the table show the number of women with children under 6 who were in the labor force in 1980 was more than double that in 1970 (i.e., 1,349 compared to 522).

FIGURE 9. PERCENT AND NUMBER OF WOMEN 16 AND OVER IN THE LABOR FORCE BY AGE OF CHILDREN IN ISLAND COUNTY AND WASHINGTON STATE: 1970 and 1980



Source: 1970 and 1980 Census of Population for Washington, Ch. C, Washington, D.C.: U.S. Government Printing Office.

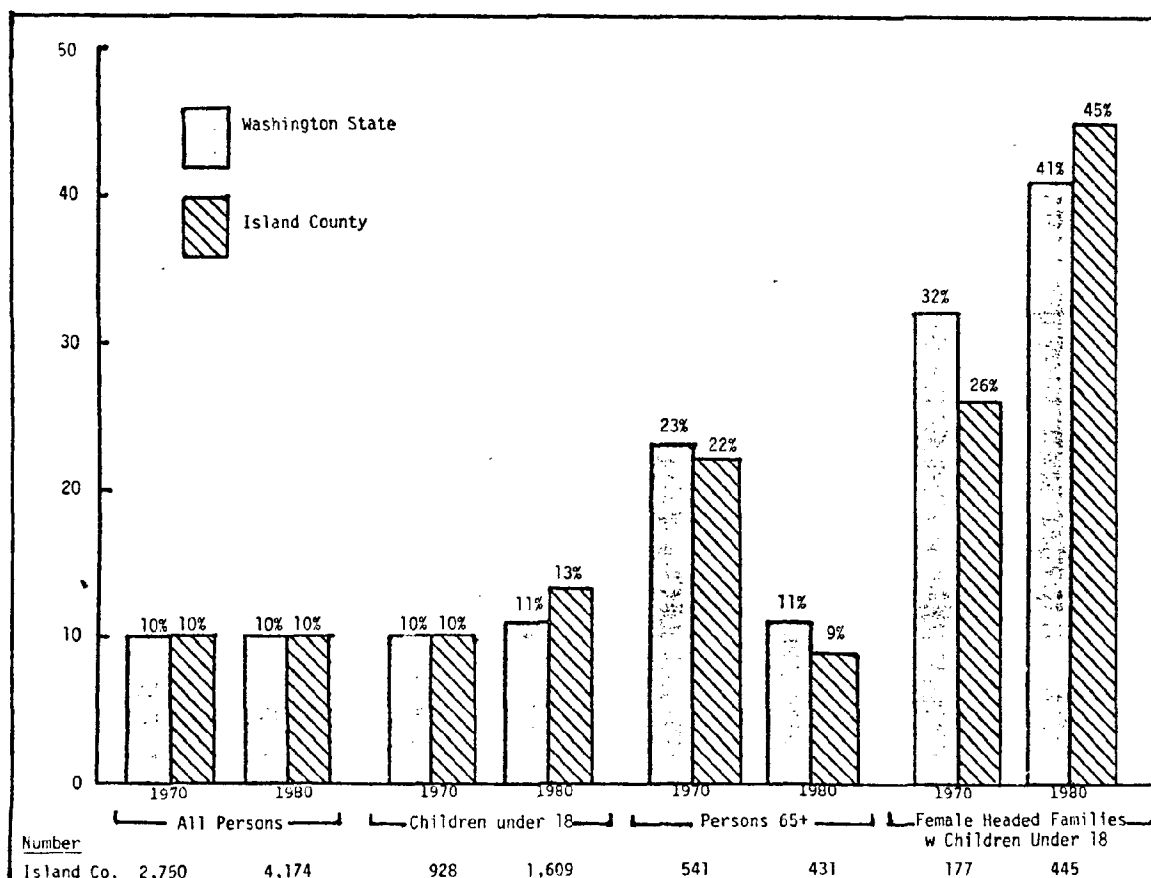
There were also large increases in the percent of women with children 6 to 17 who worked -- from 47 to 60 percent. Once again the number of working women here more than doubled, increasing from 798 to 1,775. For both groups, the increases in the percent of women in the labor force were greater for the county than for the state.

Although county level data are not available since the 1980 Census, national surveys show that this trend has continued with much of the increase occurring for women with small children. This trend points to the obvious need for adequate, well-supervised day care for preschool children and pre- and after-school supervision for older children.

### Changing Characteristics of the Poverty Population

The number and type of people below the poverty level changed a great deal in the last decade. Figure 10 compares Island County to the state for different groups falling below the poverty level in 1970 and 1980. Looking at the first set of bars, one could conclude that there has been little change in the poverty population. Ten percent of all persons in both the state and the county lived below the poverty level in both 1970 and 1980. But if we look at the number of persons below the poverty level, we can see that this has increased by 52 percent in Island County simply because the overall number of persons in the area increased.

FIGURE 10. PERCENT AND NUMBER OF PERSONS BELOW THE POVERTY LEVEL IN WASHINGTON AND ISLAND COUNTY; 1970 and 1980



Source: 1970 and 1980 Census of Population for Washington, Ch. C, Washington, D. C.: U.S. Gov. Printing Office.

Children under 18 were more likely to live below the poverty level in 1980 than in 1970 for both the state and the county. But 13 percent of the county's children were living below the poverty level in 1980 compared to 11 percent for the state as a whole.

Persons 65 and over were much less likely to live below the poverty level in 1980 than in 1970 for both the state and the county due to improvements in social security and pension plans. In Island County only 9 percent of the persons 65 and over lived below the poverty level in 1980 compared to 11 percent for the state.

Finally there were substantial increases in the percent of female headed families with children under 18 living below the poverty level in both the county and the state, but the increases were greater for the county. In 1980, 45 percent or nearly half of those families in Island County lived below the poverty level.

Data since 1980 at the national level indicate a continuation of these trends. The percent of persons 65 and over below the poverty level continues to decline while the percent of children under 18 and female headed families below the poverty level is increasing.

#### Conclusion

It is clear that the population of Island County is changing in many different ways. Growth of the county's population is the one change that is probably the most obvious to area residents. But certain segments of the population are growing more rapidly than others. There are most young adults and thus more children. These children are more likely to have had some experience with divorce, live in a single parent family and/or one below the poverty level, and have a working mother than children a decade or so ago.

There are also many more retirees in the area. These people are relatively well off when compared with children under eighteen and female headed, single parent families and when compared with the 65 and over population of a decade ago. Their relatively stable incomes can be the basis for jobs if the consumer needs of this group are met within the county.

Finally, the county is increasingly tied to the Seattle-Everett metropolitan area as a greater percent and number of the labor force commutes to that area for jobs. The increasing size of that adjacent metropolitan area means that this trend will probably continue.

All of these demographic changes imply changes for the area's economy and social services. Since most of the trends discussed here will continue at least for the near future, it is important to continue to monitor these. Decennial censuses provide the most detailed picture of an area's population. However, a number of intercensal data sources that provide more current information have been used in this report.

Prepared for Island County Cooperative Extension  
by Annabel Kirschner Cook  
Extension Sociologist, Census Data Coordinator  
Washington State University

EXHIBIT E

ELEMENT III: TIMESHEET

ISLAND COUNTY PLANNING DEPARTMENT

The preparation of this report was financially aided through a grant from the Washington State Department of Ecology with funds obtained from the National Oceanic and Atmospheric Administration and appropriated for Section 306b of the Coastal Zone Management Act of 1972.

GRANT #G0086036: ELEMENT I

1986



ELEMENT III - TIME SHEET - ANN DOLD

- 7/2/85 Analyzed Homeporting FEIS and prepared letter to the BICC regarding the Navy response to our comments on the DEIS.
- 16 hours
- 9/12/85 Attended Everett meeting regarding adequacy of the Navy FEIS with respect to SEPA - preparation of speech, travel time and meeting.
- 22 hours
  - 72 miles (Travel)
- 9/18/85 Prepared written response regarding the adequacy of the Navy Homeporting FEIS/Review with Director/Report to BICC.
- 8 hours
- 10/15/85 Attended a dinner held by the Island County's Builders Association at which Captain James Cameron, Assistant Chief of Staff, Naval Base, Seattle, spoke on the Nimitz Carrier Battle Group and Homeporting in the Pacific Northwest.
- 5 hours
- 11/19/85 Attended the Everett "Homeporting" SEPA Supplemental EIS Advisory Group Meeting of the whole group/report to BICC.
- 15 hours
  - 75 miles (Travel)
- 1/30/86 Analysis of Fiscal Impact, Analysis and Presentation to the Financial Impact Committee with report to the Planning Director and BICC.
- 18 hours
  - 67 miles (travel)
- 2/10/86 Telephone conversation with Dr. Stephen Martin regarding Scoping for Army Corps of Engineers, EIS for the Navy Homeport Facility and preparation of letter in response.
- 4 hours

ELEMENT III - TIME SHEET - ANN DOLD  
PAGE 2

4-16-86

Reviewed "The Demand for Private Housing"  
produced by the Public Works Department,  
Naval Station, Seattle and reported on  
findings to the Planning Director and BICC.

- 7 hours

Total Hours: 95

Total Miles (Travel): 223 miles (20¢/mile)

EXHIBIT A

Marshes, Bogs and Swamps within  
Shoreline Jurisdiction

INVENTORY AND EVALUATION

EXHIBIT A

ISLAND COUNTY

Marshes, Bogs and Swamps within  
Shoreline Jurisdiction

INVENTORY AND EVALUATION

ISLAND COUNTY PLANNING DEPARTMENT

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GRANT #G0086036: ELEMENT I

1986

Mr. Steve Craig  
Grant Coordinator  
Department of Ecology  
Mail Stop PV-11  
Olympia, Washington 98504

Re: Element I - Wetland Evaluation

Dear Mr. Craig:

Attached is a document prepared to evaluate marshes, bogs, and swamps, under shoreline jurisdiction. It is divided into two parts; one for Whidbey Island and the other for Camano. Each section begins with a summary evaluation for the area, followed by specific wetland descriptions. The summary evaluations prepared by wetland ecologists with Shapiro and Associates will form the basis of an amendment to the Natural Systems section of our local Shoreline Master Program. The specific evaluations were prepared by County staff, and while limited in number, they do represent a wide range of marsh types and conditions.

The document presented, herewith, is not intended to be complete. It will be supplemented as our work continues with on-site investigation and subsequent evaluation. Our purpose is to gain an understanding of the range of wetland types in Island County, to better tailor the amendments which will seek to protect and regulate such areas. A secondary product is, of course, these specific evaluations which, over time, will include all of the significant marshes, bogs and swamps under shoreline jurisdiction.

The wetlands evaluated in this document are numbered according to the appropriate CZM atlas page number. It is hoped that this system will allow easy reference of the appropriate maps for these areas.

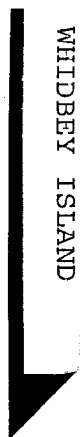
If you have any questions, please don't hesitate to call.

Sincerely,

Ann Dold  
Planner II

AD:sg

WHIDBEY ISLAND



# SHAPIRO & ASSOCIATES<sub>PC</sub>

## MEMORANDUM

The Smith Tower  
Suite 1812  
506 Second Avenue

Seattle  
Washington 98104

206/624-9190

TO: Ann Dold, Island County Planning Department  
FROM: Ron Kranz, Shapiro and Associates, Inc.  
DATE: June 30, 1986  
RE: Island County Wetland Regulations

On June 12, 1986, a reconnaissance of wetlands on Whidbey Island was conducted. The objective was to identify the diversity and abundance of wetland habitat types, wetland and habitat sizes, possible habitat functions, and the accuracy of the U.S. Fish and Wildlife Service National Wetland Inventory (NWI) maps for this area. Prior to field reconnaissance, the Island County Coastal Zone Atlas and NWI maps were reviewed. These materials were then taken into the field where a seven-hour field reconnaissance (windshield survey) was conducted. Given the time constraint to cover a large area, wetlands readily accessible by roadways were given priority. The following is a summary description of each wetland system identified during the field visit.

### Marine Systems

The marine system is characterized by waters with salinities exceeding 30 parts per thousand, substrates exposed to wave action, and water levels fluctuating with tides. In Island County, marine systems occur in a narrow band along the western shoreline from Rosario Strait to Admiralty Head. This system includes subtidal and intertidal habitat. Both these habitat types are dominated by aquatic beds of submergent algae and mudflats. The NWI maps identify only intertidal habitats; subtidal habitats are also present, although unmapped. The distribution of marine wetlands consists of a narrow band less than 50 feet wide where steep slopes enter the Sound, and a several hundred feet wide band at protected inlets. In these areas where the marine wetland band is several hundred feet wide, sandy or gravelly beaches may develop. There appears to be a distinct boundary between marine wetlands and upland habitats. No palustrine wetlands appear to be associated with the marine system. These marine wetlands provide valuable habitat for shellfish, fish and birds, particularly waterfowl and shorebirds. These areas also offer recreational opportunities. These conclusions are based on observations made at Burrow's Bay, Deception Pass, and Admiralty Head.

### Estuarine System

The estuarine system consists of deep water habitats and adjacent tidal wetlands with water salinities less than 30 parts per thousand upstream and landward to where salinities are reduced to 0.5 parts per thousand. In Island County, this system occurs along the eastern, southern and

Memo to Ann Dold  
June 30, 1986  
Page Two

southwestern shorelines. This system includes subtidal and intertidal habitats that are located in protected semi-enclosed areas of harbors, lagoons, and bays; typically, they are 1,000 feet in width and can extend to several thousand feet. In areas of steep slopes and bluffs, these systems generally are less than 500 feet wide. The intertidal habitats of the estuarine system, like the marine system, are comprised of aquatic beds dominated by algae and mudflats with an occasional gravel beach. Subtidal habitats are present; however, these are unmapped. Unlike the marine system, the estuarine system is closely associated with the palustrine system. In areas where coastal roads cross lagoons and other wetlands, the hydrologic character may be modified by road fills or dikes and by the use of tide gates. At Kennedy's Lagoon in Penn Cove, it appears the road fill has blocked the tidal influence. Reconnaissance at this site occurred during low tide; no obvious water level fluctuation was noted. With little water level fluctuation, the wetland band around the lagoon is narrow, ranging from 5 to 15 feet. In the case of Crockett Lake, a tide gate allows tidal influence to fluctuate water levels. This influence results in a wide wetland band around the lake. Due to the diversity of habitat types, i.e., open water, aquatic bed, mudflat, and palustrine wetland systems along the eastern shoreline of Island County, these wetlands are particularly valuable as habitat. These conclusions are based on observations made at Holmes Harbor, Penn Cove, Admiralty Bay, Useless Bay, and Cultus Bay.

#### Palustrine System

The palustrine system includes all non-tidal wetlands and tidal wetlands (where salinities are less than 0.5 parts per thousand) dominated by trees, shrubs, and emergent vascular plants.

Palustrine wetlands occur throughout Whidbey Island in isolated depressions, along creek channels and draws, and in close association with the estuarine system. These wetlands encompass a variety of sizes and can be grouped into those wetlands that are less than an acre, those that are approximately 10 acres, and those that are approximately 40 acres in size; few palustrine wetlands were greater than 40 acres in size. Estuarine wetland types include open water, emergent vascular plants, shrubs, swamps and forested swamps. Open water habitats typically support pond lilies; emergent habitats support cattails, bulrush, and sedges; shrub swamps include spirea and willow. The plant community composition for each palustrine wetland type is generally consistent throughout the Island. Forested swamps are limited in extent and were not reviewed during this reconnaissance. Emergent wetlands were the most commonly observed; however, often a combined system of open water blending into emergent, and then shrub swamp occurs.



memo to Ann Dold  
June 30, 1986  
Page Three

The NWI maps appear generally to be accurate in identification of the various habitat types and their extent. Where open water, emergent, and shrub wetlands blend together, the individual boundaries may differ from the NWI maps. These conclusions are based on observations of palustrine wetlands associated with Oak Harbor, Dugwalla Bay, Coveland near Penn Cove, Bay View, and along Mutiny Bay Road.

#### Lacustrine System

The lacustrine system includes wetlands and deep water habitats that have all of the following characteristics:

1. situated in topographic depression
2. vegetation cover less than 30%, and
3. exceed 20 acres in size.

Lacustrine wetlands comprise a small portion of the total wetland types present on Whidbey Island, as vegetation cover (2) and size (3) criteria above are not met. Larger lakes that occur near the shoreline of Puget Sound (e.g. Crockett Lake and Lake Hancock) technically belong to the estuarine system and smaller, well vegetated lakes (e.g., Oliver Lake and Chase Lake) belong to the palustrine system. Lacustrine system in this area typically are comprised of 80-90% open water with a narrow band (50-100 feet wide) of aquatic bed, emergent and shrub vegetation. The narrow wetland band is most often dominated by young willow. Where inlets and outlets to the lakes occur, the wetland is much more extensive, often comprising several hundred feet in width from open water to upland areas. In these areas, a transition from aquatic bed to emergent marsh to shrub swamp communities occurs. Aquatic bed vegetation is dominated by pond lilies, emergent marsh by cattails, bulrush, and sedges, and shrub swamp by willow and red alder. Lakes can be valuable for flood storage and for fishing and recreation.

#### Wetland Functions

Wetlands on Whidbey Island appear to perform a variety of functions. The birds listed below were observed during the reconnaissance and serve as an indicator of the habitat values associated with the wetland types. With marine, estuarine, palustrine, and lacustrine systems present on Whidbey Island, a wide variety and diversity of habitats are available for species that require specific niches. Wetlands serve as a buffer between open water areas/shoreline and residential/agricultural activities. This buffer not only protects habitat, but filters surface runoff before discharging into bays and harbors. Wetlands, particularly open water areas, provide passive and active recreational use opportunities.

Memo to Ann Dold  
June 30, 1986  
Page Four

Birds Observed During Field Reconnaissance  
June 12, 1986

American robin	bald eagle
Brewers blackbird	American goldfinch
redwing blackbird	purple finch
barn swallows	blue-wing teal
violet-green swallow	mallard
great blue heron	raven
gulls	northern harrier
chestnut-backed chickadee	red-tail hawk
black-capped chickadee	cormorant
cedar waxwing	killdeer
starling	sand piper
song sparrow	

Summary

A wide variety of wetland types occur on Whidbey Island. These include representatives of marine, estuarine, palustrine, and lacustrine systems; no examples of riverine systems were noted during field observations, nor are any present on the NWI maps. The marine and estuarine systems are dominated by aquatic algae beds and mudflats. Palustrine wetlands are predominantly emergent marshes dominated by cattails, bulrush, and sedges, but often occur in an open water, aquatic bed, emergent marsh, shrub swamp transition. Very little forested swamp is present on the island. Palustrine wetlands vary greatly in size from less than one acre to over 40 acres. Many isolated depressions with standing water occur on the island; however, due to their relatively small size and extensive vegetation cover, few meet the criteria for the lacustrine wetland system. Generally speaking, the NWI maps are accurate and correct.

Functional values of Whidbey Island wetlands include wildlife habitat, recreational opportunities, buffers from residential and agricultural lands, and some flood storage and water quality protection. The high habitat value inherent to these wetlands is due largely to the diversity of wetland types present on Whidbey Island.

Although this field reconnaissance provides only an overview of the general character, these observations should provide you with some insight into the types, values, and relative abundance of wetlands on Whidbey Island.

WETLAND EVALUATION #IS 1-1 (Cranberry Lake)

LOCATION: SECTION 34 and 35, TOWNSHIP 34N, RANGE 1E  
SECTION 3, TOWNSHIP 33N, RANGE 1E

CZM ATLAS MAP #: IS 1

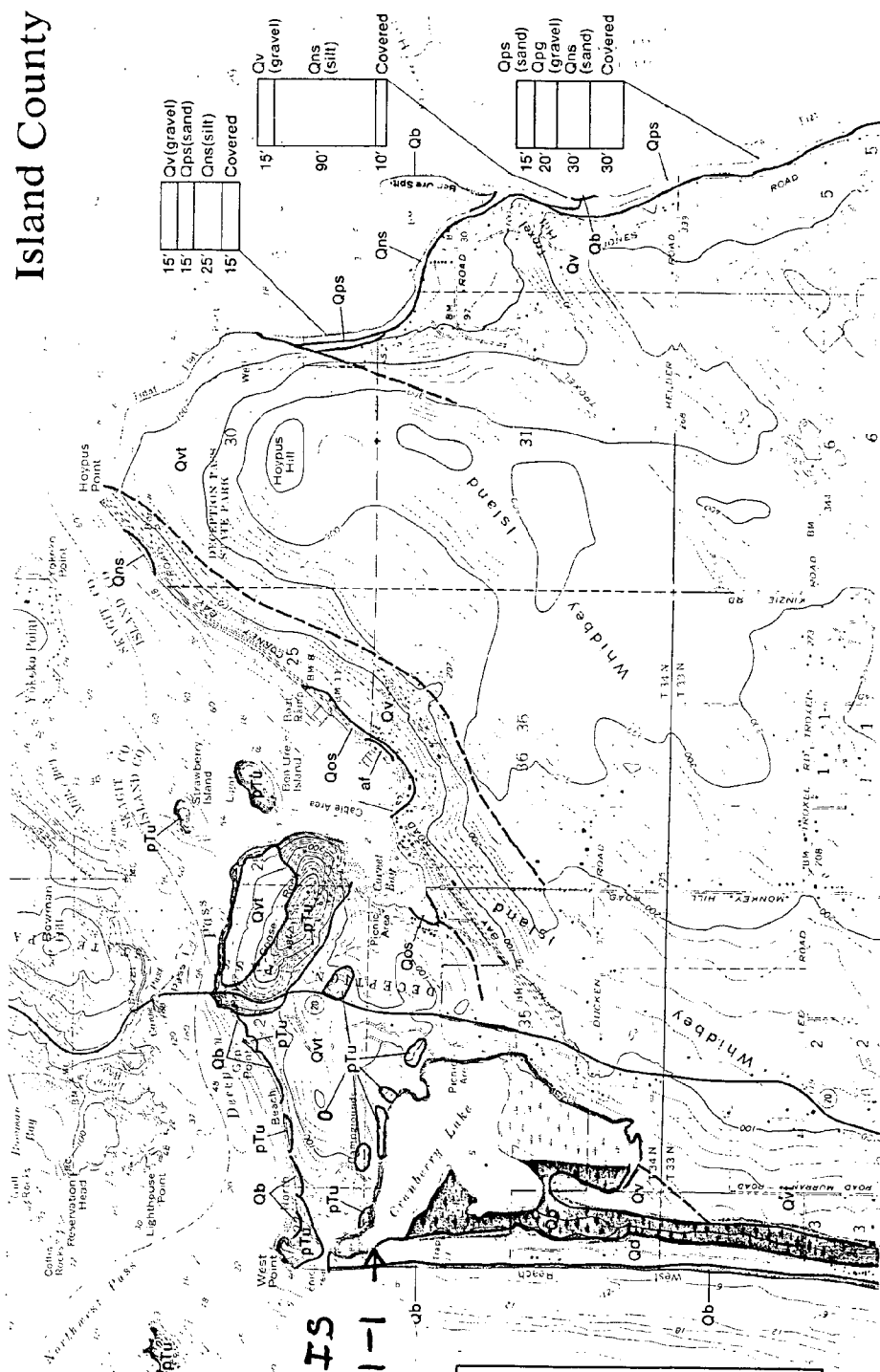
WETLAND CHARACTERISTICS: Cranberry Lake in Deception Pass State Park, is surrounded to the east and south by shallow marshes, which grade from palustrian-emergent to shrub-scrub and alder forests. The park status of this area has protected the marsh, leaving it relatively undisturbed. Nuphar polysepalum (yellow pond lilly) and Typha latifolia (cattails) are common in the shallow water areas and the shrub-scrub areas support a wide range of wetland species, including Spirea douglassi (hard-hack), Salix sp. (willow), Carex sp., Scirpus sp. and Juncus sp. The alder forest that is upland from the shrub-scrub wetland has an understory of Oenanthe sarmentosa (water parsley) and Lysichitum americanum (skunk cabbage).

The lake contains good populations of rainbow trout and some catfish. The marsh is home to muskrat, beaver and fox. The entire area is heavily frequented by Bald Eagles (year round) and a wide range of birds use the woodlands, marsh and open water areas for habitat.

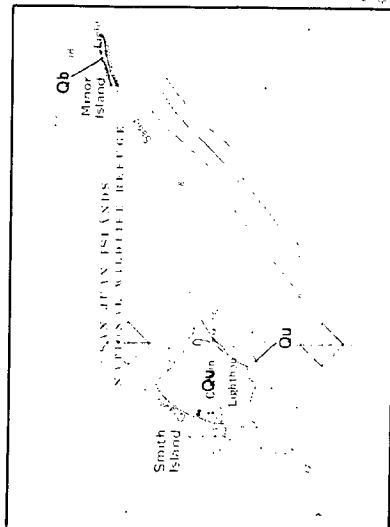
Cranberry Lake drains out of the park to the south. Its outlet is offset by a dune system which keeps the drainage course parallel to the shoreline and behind the secondary dune. The channel is choked with cattails and only parts of it have a clearly defined, open-water drainage channel. At points, roads cross the wetland to homes along the shore and some portions of the marsh have been filled in the past to increase useable lot area.

WETLAND EVALUATION: Cranberry Lake and the surrounding area exhibits a wide range of ecosystem types. The lake, its attendant marshes and adjacent dunes, the surrounding woodlands and rocky headlands protecting pocket beaches, are all within walking distance and have high educational and recreational values. Over two million visitors a year attest to this, but the heavy usage has put a great deal of pressure on the natural systems. Nevertheless, the marsh has been somewhat immune as even boaters cannot penetrate the thickly emergent palustrian portions of the wetland. The drainage course to the south is narrow and impacted by human use on both sides. For this reason there is less value to wildlife, although song birds and nesting waterfowl can find adequate cover. On the other hand, the drainage course provides water quality control and flood storage capacity..

# Island County



Geology



*Ann Dold*



*Whidbey Island  
Habitat Study*

*by S.C.S. and  
Wash. Dept. of Game*

SITE #2: DECEPTION PASS STATE PARK, AND SURROUNDING AREA

APPROX. ACREAGE (of area studied): 56

HABITAT: Shoreline, sand dunes, marshlands, lake, wooded acreage.

ACCESSIBILITY: Maximum. Paved road system throughout park, rest can be reached by foot trails well-maintained by State Parks Department. Cliffs dangerous for those who wander off trails.

VALUE: CRITICAL. No doubt one of the most scenic spots in the entire Northwest, as over 2 million visitors annually attest. Its value to the human spirit and eye could never be touched in dollars and cents. Aside from the dramatic sweeping vistas, this area is extremely rich in wildflowers. Also entire area is heavily frequented by Bald Eagles, year round.

USE: Extremely heavy recreational use, ranging from camping, to picnicking, swimming, sunning, photography, climbing, nature studies, fishing, beach combing, and diving.

SPECIAL PROBLEMS: Because of the extreme people use, wildlife here is subjected to constant pressure from sheer number of viewers alone. It is a well-trampled area, and the "harrassment factor" to more delicate forms of flora and fauna is overbearing. Little is left alone. As our population continues to grow, the human need to "get away from it all" will also grow, and areas like this will receive even more pressure. Because of this, neighboring natural areas such as Hoypus, should be left intact and undeveloped.

LIFE FORMS NOTED AT SITE:

Because of its proximity to Hoypus, nearly all the wildlife and plant-life common to the one is found in the other. The main difference is that because of the heavy use, the numbers of those found on the park, are far less. Many feel the quality of the "viewing experience" is also decreased, more like seeing a creature in the zoo than in its natural setting. Rather than repeat the wildlife listing here, consult Hoypus Hill writeup.

One "habitat" found on Deception Pass State Park, not found on Hoypus is the "lake environment." Cranberry Lake contains good populations of rainbow trout (planted), and also some catfish (brown bullhead) and perch. The marsh area on the extreme back end of the lake, is also home to muskrat, and an occasional beaver.

. . . . .

SITE #2:

The Deception Pass area is a treasure house of wildflowers. Each radiant in its brief season. For those who would sample their splendor there, noted wildflower expert Dorothy Leckenby has graciously compiled a listing of what you might see there, where and when.

Wildflowers of the Rocky Slopes:

Satin Flower	Hooker's Onion
(Sisyrinchium Douglasii)	Nodding Onion
Early Saxifrage	Hyacinth Brodiaea
Prairie Star (Lithofragma)	Blue-eyed Grass
Blue-eyed Mary	Stonecrop
Mouse-eared Chickweed or	Menzies' Larkspur
Field Chickweed	Habenaria
Death Camas	Camas
Lupine	Chocolate Lily
Spring Gold	

Wildflowers of the Open Woodland and Forest:\*

Red Flowering Current	Dog Tooth Violet
Calypso or Fairy Slipper	Big Red Leaf Maple Flower
Red Elderberry Flower	Heuchera
Orange Honeysuckle	Pacific Crabapple Flower
Thimble Berry Flower	Ocean Spray
False Lily of the Valley	Star Flower
Miner's Lettuce	Woodland Rose
Twin Flower	Coral Root
Foamflower	Salal Flower

\* many of these are shrubs, but are laden with beautiful flowers in season.

Floral Beauty Appearing on the Sand Dunes:

Glenhina	Beach Pea
Beach Morning Glory	Sand Verbena
Gray Beach Pea	Sea Blush
Indian Paint Brush	Yellow Water Lily
Red-osier Dogwood	Sparganium
Monkey Flower	Canadian Mint
Yellow-eyed Grass	Shore Lupine
Thrift or Sea Pink	Orobancha grayana
Salicornia pacifica	Honeysuckle
Wild Crabapple (Pyrus fusca)	(Lonicera ciliosa)
False Lily of the Valley	Kinnikinnick
(Maianthemum dilatatum)	(Arctostaphylos uva-ursi)
Golden Eyed Grass	Spirea (Spirea Douglasii)
(Sisyrinchium californicum)	Gumweed
Nootka Rose	Cow-Parsnip
Potentilla	

N.B. This is a partial listing only. Were we to thoroughly and exhaustively catalogue even one site, our study would run into volumes.

SITE #2:

When Best to View the Flora of the Deception Pass Area:

Early Spring:

Old roads:	Indian Plum, Osoberry	(Osmaronia cerasiformis)
	Skunk Cabbage	(Lysichitum americanum)
	Alder	(Alnus) Staminate catkins
	Coltsfoot	(Petasites palmatus)
Roadsides:	Douglas Fir Cones	(Pseudotsuga menziesii)
	staminate & pistillate	
	Oregon Grape, Mahonia	(Berberis aquifolium)
	Salmonberry	(Rubus spectabilis)
Open	Dog Tooth Violet	(Erythronium oregonum)
Woodlands:	Fawn Lily	
	Fairy Slipper	(Calypso bulbosa)
Rocky	Grass Widow	(Sisyrinchium Douglasii)
Bluffs:	Satin Flower	
	Stonecrop	(Sedum Spathulifolium)
		(Saxafraga integrifolia)
	Prairie Star	
	Fringe Cup	(Lithofragma parviflora)
	Kinnikinnick	(Arctostaphylos una-ursi)
	Blue-eyed Mary	(Collinsia sp?)
	Red Current	(Ribes sanguineum)
	Shooting Star	(Dodecatheum hendersonii)

Spring (later):

Open	Flower of Maple Tree	(Acer macrophyllum)
Woodlands:	Star Flower	(Trientalis latifolia)
Rocky	Mouse Ear Chickweed	(Cerastium arvense)
Bluffs &	Indian Paint Brush	(Castilleja miniata)
Meadows:		(Orobancha uniflora)
	Monkey Flower	(Mimulus sp?)
	Sea Blush	(Plectritis congesta)
	Service Berry	(Amelanchier alnifolia)
	Camas	(Camassia quamash)
	Lupine	(Lupinus?)
	Chocolate Lily	(Fritillaria lanceolata)
	Wild strawberry	(Fragaria sp?)
	Death Camas	(Zigadenus venosus)
	Delphinium	(Delphium menziesii)
Fields:	Iris	(Iris missouriensis)
	Swamp Gooseberry	(Ribes lacustre)
	Red Elderberry	(Sambucus racemosa)



SITE #2:When Best to View the Flora of Deception Pass Area, cont.

## Summer into Fall:

<u>June:</u>	Siberian Lettuce	(Montia siberica)
	Foamflower	(Tiarella trifoliata)
Forest &	Corral Root	(Corallorhiza sp?)
Woodland:	Twinflower	(Linnea borealis)
	Dwarf Rose	(Rosa gymnocarpa)
	Evergreen Huckleberry	(Vaccinium ovatum)
Roadside:	Salal	(Gaultheria shallon)
	Nootka Rose	(Rosa nutkana)
	Thimbleberry	(Rubus parviflorus)
	Fringe Cup	(Tellima grandiflora)
Field &	Ox-eye Daisy	(Chrysanthemum leucanthemum)
Meadow:	Tree Lupine	(Lupinus arboreus)
	Fleebane	(Erigeron sp?)
	Wooly Sunflower	(Eriophyllum lanatum)
	Stonecrop	(Sedum spathulifolium)
	Hookers Onion	(Allium acuminatum)
	Blue-Eyed Grass	(Sisyrinchium angustifolium)

July:

Seashore:	Indian Paint Brush	(Castilleja miniata)
	Nodding Onion	(Allium cernuum)
Fields:	Tiger Lily	(Lilium columbianum)
	Brodiaea	(Brodiaea coronaria)
Forest:	Pyrola	(Pyrola asphylla)
	Indian Pipes	(Monotropa uniflora)
Roadside:	Oceanspray	(Holodiscus discolor)
	Red Elderberry	(Sambucus racemosa)

August:

Field:	Tansy	(Tanacetum vulgare)
	Chicory	(Cichorium intybus)
	Aster	(Aster subspicalus)
	Queen Annes' Lace	(Daucus carota)
Forest:	Wild Lettuce	(Lactuca muralis)
	Slender Spire Orchid	(Habenaria unalascensis)
Open	Garry Oak (acorn)	(Quercus garryana)
Woodland:	Madrona	(Arbutus menziesii)
Shore:	Gumweed	(Grindelia integrifolia)

. . . . .

DECEPTION PASS, cont.

FIELD NOTES:

"Excluding ocean beaches, on which we do not have accurate counts, Deception Pass State Park is the most heavily used State Park in all of Washington State. It even draws more people than Mount Rainier National Park. In 1978 over 2,156,000 visited here. Attendance of late has been down a bit because of the gas crunch, but looking at the future, we can only estimate that more and more people will be using this and all our Parks . . . "

. . . . .

"One brisk, March morning, while struggling to photograph a Satin Flower (*Sisyrinchium douglasii*) on Pass Island, I was flat on the ground trying to focus a micro lens on the flower that was dancing merrily in the sunshine when I heard a strange sound (noise) behind me. I got up to see what was going on. It was a huge log boom being escorted through the Pass by 5 tugs-always an interesting thing to watch. I put in 3 views of the log boom with the *Sisyrinchium* . . . "

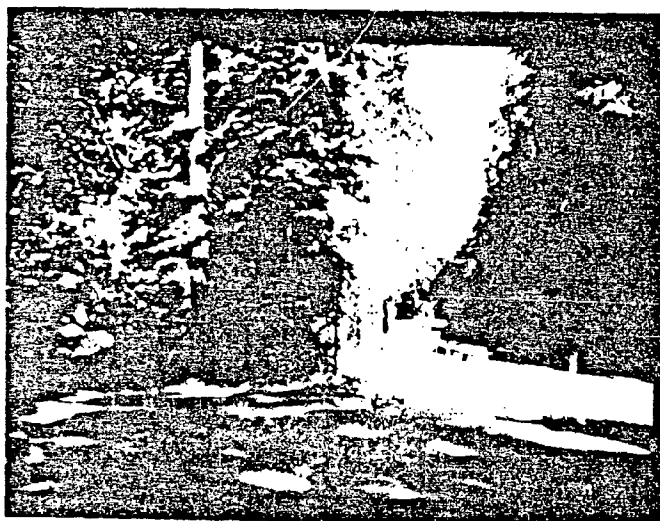
. . . . .

"Checked a Navy man who caught a 16 inch rainbow out of Cranberry Lk. today. He was beaming. He said it made up for all the trips he got skunked. . . "  
(field notes of Agent de la Torre, May 1979)

. . . . .

"My great, great grandfather helped build this big bridge. I was just a boy the first time I saw it. Now, after so many years I'm standing on it again. I've gotten older, it seems the same. . . "

(Dr. Amadeo Rea, Ornithologist, and Curator of Birds and Mammals, San Diego Museum of Natural History)



More than 2 miles of access roads wind through deep woods, past a freshwater lake, and ocean beaches in Deception Pass State Park.

"As soon as school lets out, my favorite place is in the woods or swamp. There isn't a day when I don't see something neat. Like once I saw a red fox being chased by an ordinary housecat, maybe they were buddies or just playing around, because usually its the fox who is after cats. I've gotten into the marshy areas in back of Cranberry Lake, where not too many people bother to go, and I've seen beaver and muskrat there. Last winter, when it was so cold and the lake froze, I was out ice skating on it. Suddenly I saw a muskrat swimming in the water underneath the ice I was on. I followed him a while, he looking up at me, me looking down at him. It was really something. Another time I saw 7 eagles at once on Deception Island. One day I was out on the lake, and saw a beautiful wood duck take off. Another time I came up on two really huge black-tailed bucks, big 4 points in full velvet, now that's really a sight. This is really a neat place for a kid to grow up."

(Charlie Beeksma, son of Ed Beeksma, Oak Harbor Attorney)

5-16-85

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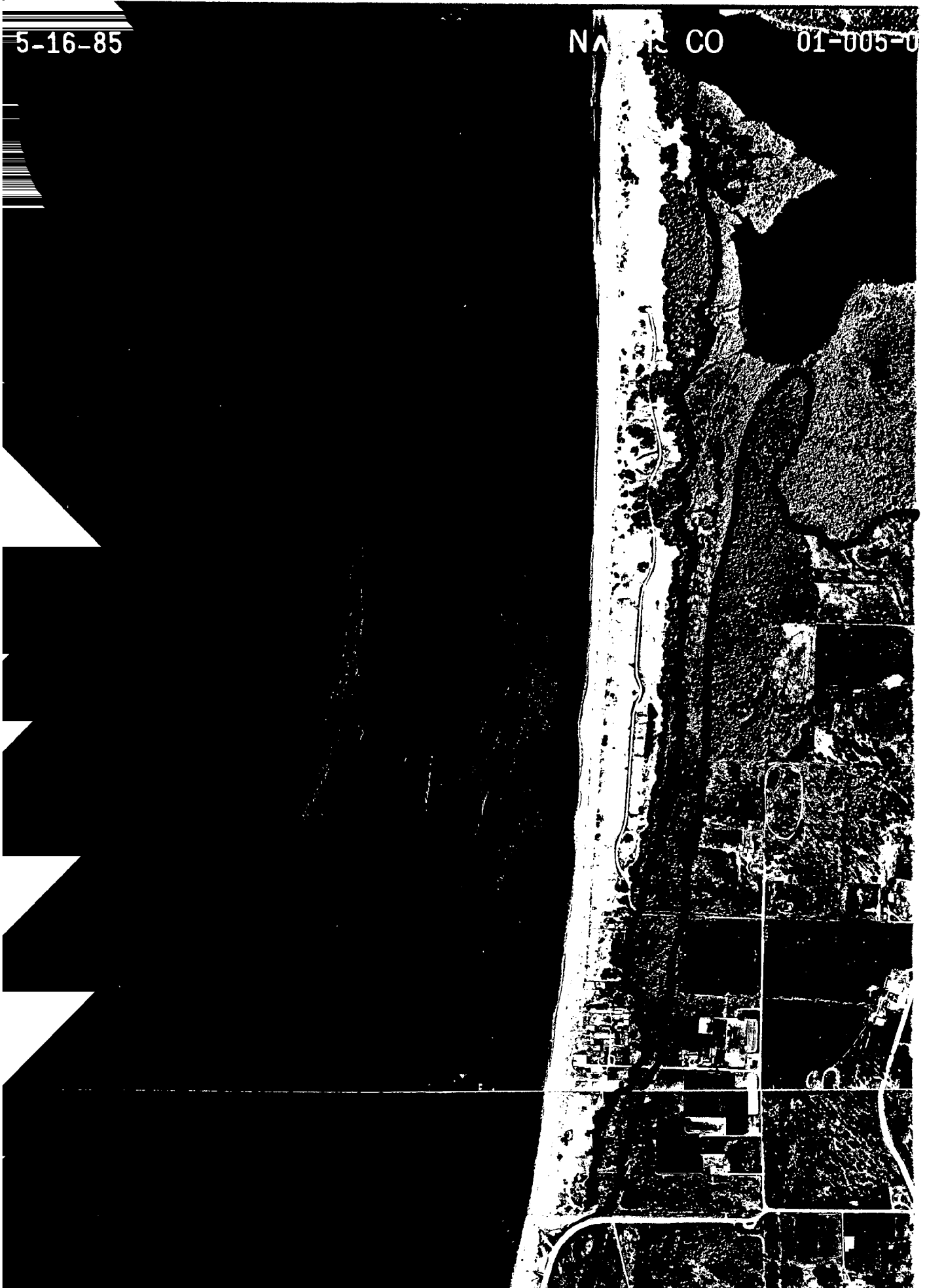
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WETLAND EVALUATION #IS 2-1 (SWANTOWN)

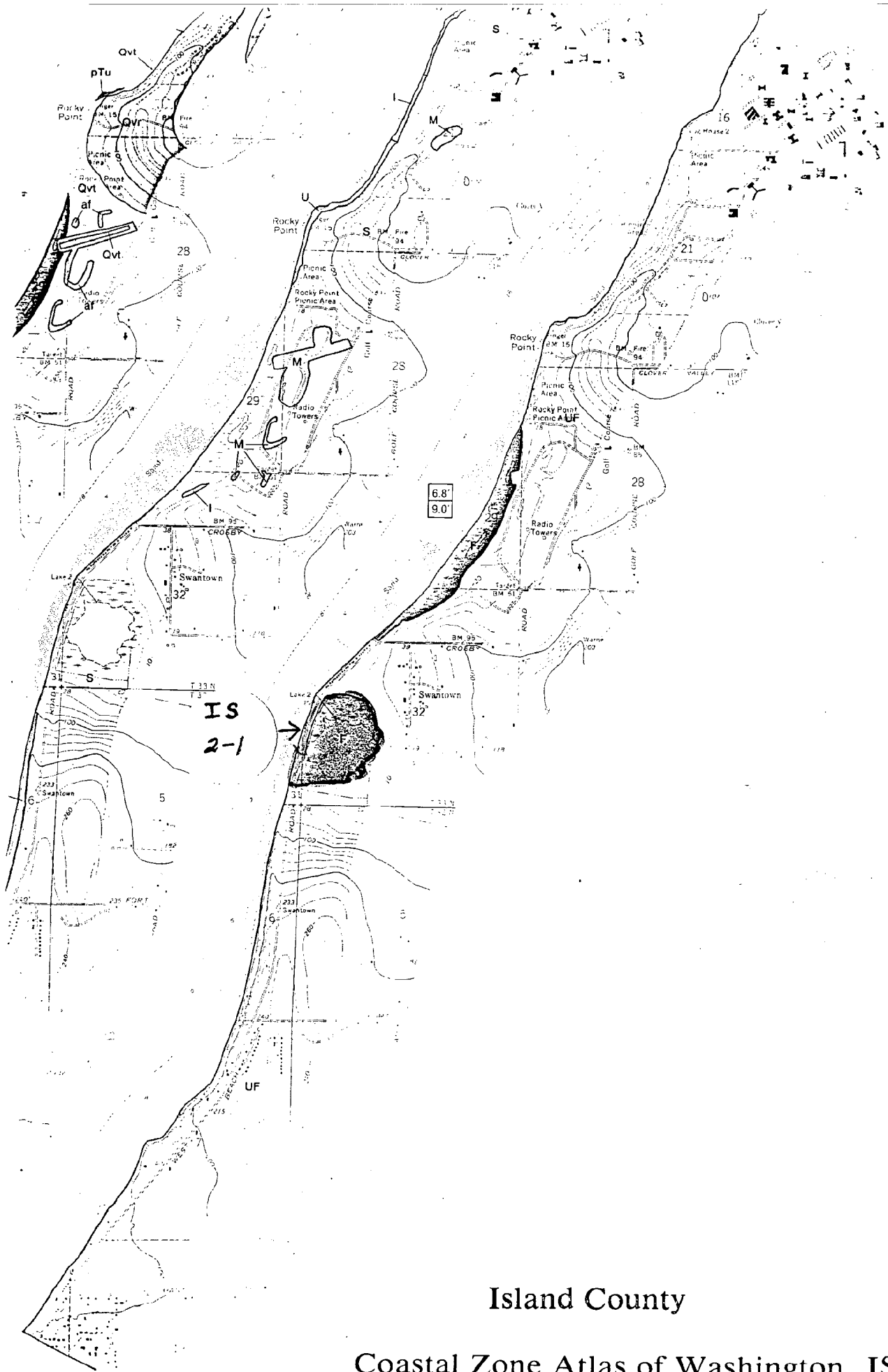
LOCATION: NORTHWEST QUARTER, SECTION 32, TOWNSHIP 33 NORTH,  
RANGE 1 EAST

CZM MAP #: IS 2

WETLAND CHARACTERISTICS: The Coastal Zone Atlas classified this area as a salt marsh and salt meadow. Field inspection verified the marine influence. Salt tolerant wetland plants: Distichlis spicata (salt grass), Salicornia virginica (pickleweed), Potentilla pacifica (silver weed) and sedges are found throughout the area. Reed canary grass grows in the more upland portions of this wetland.

Almost the entire wetland is characterized by the hydric soil, Tacoma peat (0-2% slopes). It receives runoff from a large watershed and drains out through a tidegate in the berm to the South. A series of ditches are in evidence apparently excavated in an attempt to dewater the marsh. The ditches are now flooded and there is some concern that the tidegates have failed. A large, shallow, open water area is the result.

WETLAND VALUES: The area is used by migratory water fowl and resident species of birds. Where there are no dense shrubs, to conceal nesting and other wildlife requirements, it does have heavy stands of reed canary grass, which can provide some cover. By and large the primary value of this wetland is the fact that it impounds water from a large upland drainage basin. This watershed contains many large farms (many of which raise cattle), large development communities and a golf course. Activities such as these to contribute pollutants which accumulate in the marsh and settle out or are taken up by plants. The marsh thus serves to protect the marine environment from many contaminants.



Island County

Coastal Zone Atlas of Washington IS 2A



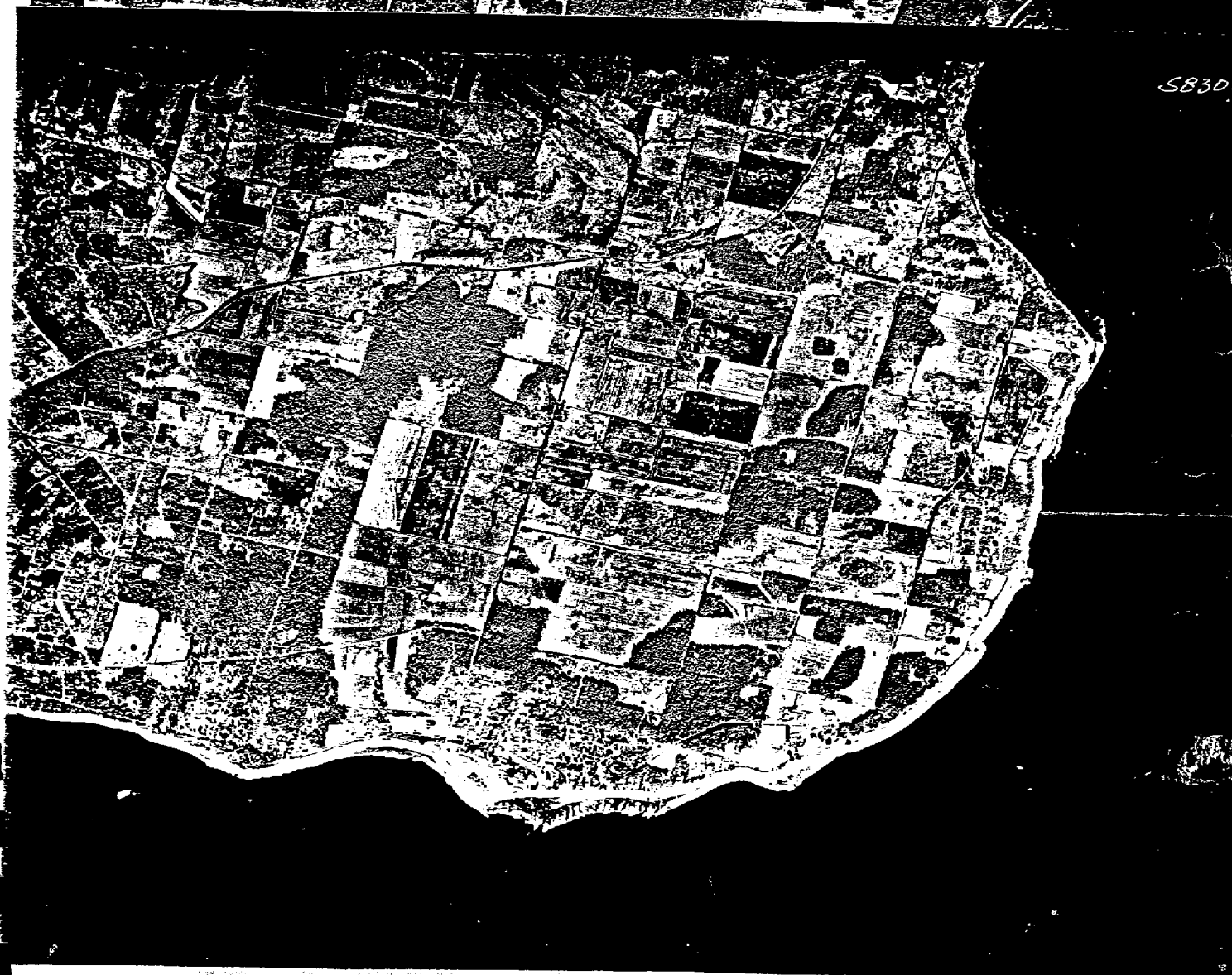
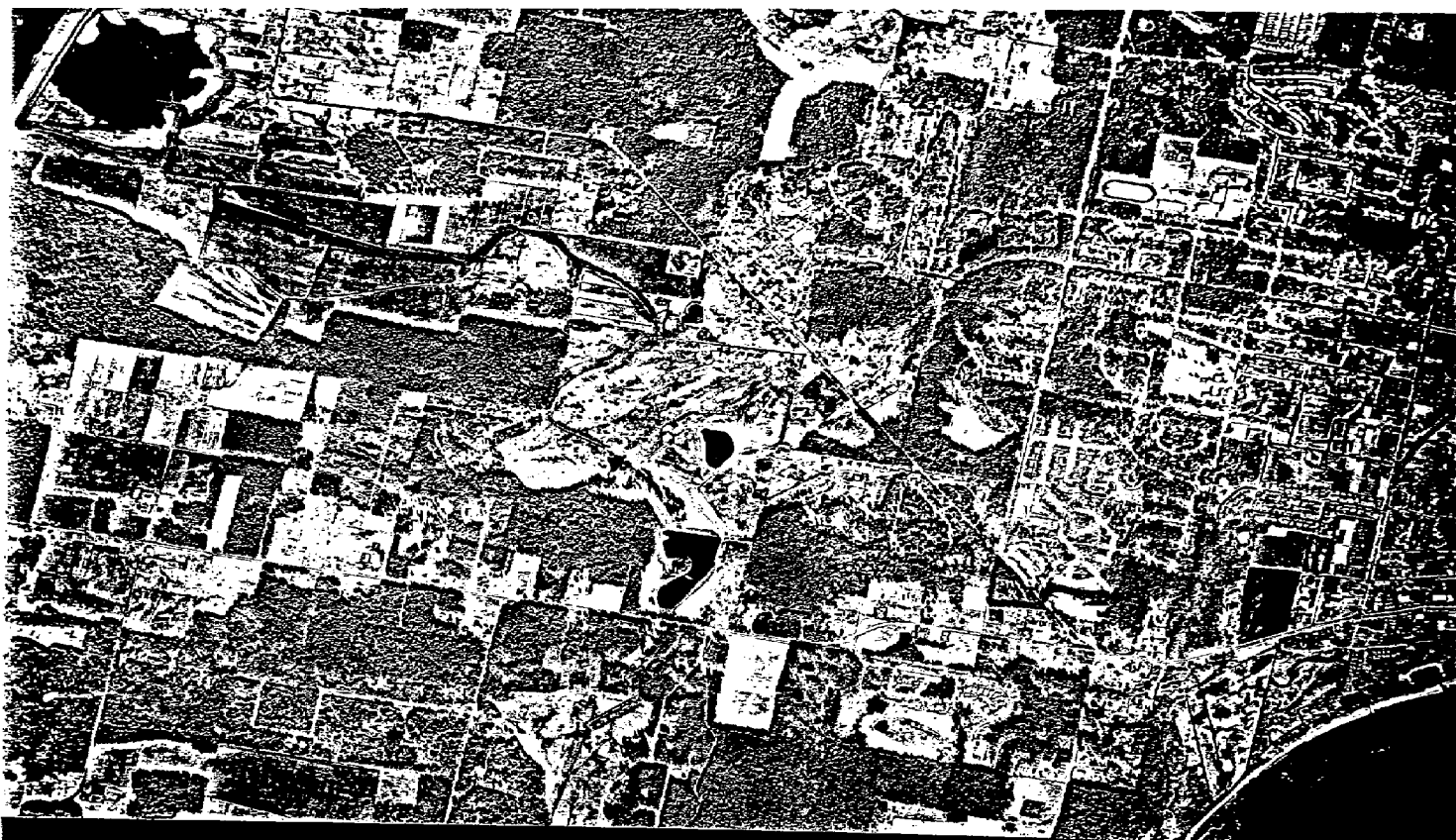


5-16-85

NA IS CO

01-003-039





WETLAND EVALUATION #IS 3-1 (Dugualia Bay)

LOCATION: SECTION 7 and 18, TOWNSHIP 33N, RANGE 2E

CZM ATLAS MAP #: IS 3

WETLAND CHARACTERISTICS AND EVALUATION: See attachments.

1. Dugualia Bay and Marsh (Site #4) Whidbey Island Habitat Study -- prepared by the Soil Conservation Service and the Washington State Department of Game, 1979.
2. Dugualia Bay -- prepared by Linda Phillips, Sponsored by the U.S. Corps of Engineers, Wetland Plants of the Snohomish Estuary Delta and Dugualia Bay, Whidbey Island., September, 1977.



SITE # 4: Dugualia Bay and Marsh

APPROX. ACREAGE: 50

HABITAT: Rich farmlands interspersed with marsh and brush lands, large brackish lake, and tidal mud flats.

ACCESSIBILITY: Easily accessible by foot from main highway (525), Frostad Road or Dugualia Dike Road.

VALUE: CRITICAL. Principle waterfowl resting/feeding marsh servicing north end of Whidbey. Great numbers of stickleback and smaller fish hatch here. These provide food source for larger food fish more valued by men. Salmon also spawn in this area. Dugualia Lake is rich in nutrients, and grows a huge rainbow trout. Aside from waterfowl, a great variety of raptors and shorebirds inhabit the site. Pheasant and quail propagate and inhabit area year round, and red fox, raccoon and muskrat, valued for their fur, are common here. Area is heavily used and enjoyed by public. One of few sites visited by cutthroat on Whidbey.

USE: HEAVY USE. Area on either side farmed to edge of pond. Site is used by trout fishermen spring through early fall, by trappers going after muskrat, raccoon and fox in the fall and winter months, and by duck and pheasant hunters during the open seasons. Summer sees the lake often used for mini-hydroplane racing.

LIFE FORMS NOTED AT SITE:

Waterfowl:

Widgeon	Scaup
Greenwing teal	Bufflehead
Pintails	Goldeneye
Mallards	Ruddy ducks
Gadwalls	Coots
(and many other species in lesser numbers)*	

\* visited annually by a few whistling swan and an occasional trumpeter.

Other Bird Life Noted:

Marsh hawks	Mew gull
Red-tailed hawk	Bonapartes gull
Kestrel	Cormorants (3 species here)
Barn owl	Loons (common & Arctic noted here)
Great horned owl	Western grebe
Killdeer	Chinese pheasant
Long-billed curlew	California quail
Spotted sandpiper	Reeves pheasant
Greater yellowlegs	Swallows (barn, cliff & violet-green)
Sanderlings	Sparrows (many types)
Western sandpiper	Great blue heron
Glaucous-winged gull	Bald eagle
Herring gull	

Site # 4: Dugwalla Bay and Marsh (con't)

Other Wildlife Noted:

Raccoon	Dungeness crabs
Red box	Rainbow trout
Muskrat	Cutthroat trout
Deer mice	Weasel
Garter snake	

Typical Site Vegetation:

Gumplant	Catseye
Mustard	Yarrow
Wild rose	Thistle
Fir	Alfalfa
Alder	Wheat
Hemlock	Corn
Beach pine	Raspberry (black cap)
Red clover	A few apple trees
Cattails	
Salt grass	

SOME INTERESTING FIELD NOTES:

Observations on August 3, 1977 and again on October 4, 1977

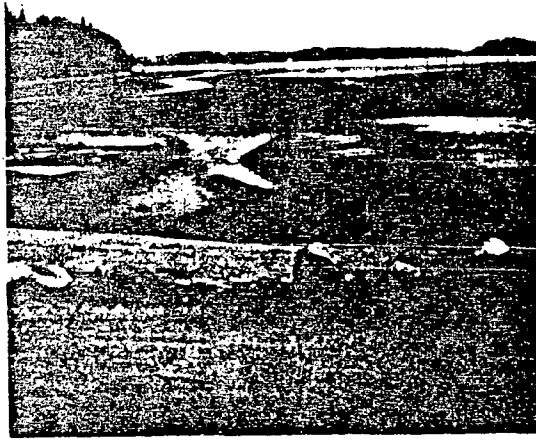
"Dugwalla Bay has blessed me with some rare wildlife vignettes. Many hundreds of times I have noted blue herons "fishing." But on Aug. 3, 1977, I saw a great blue heron nail and fly off with a garter snake. On Sept. 29, 1977, I witnessed another blue heron posed for a strike in the wheat stubble. Suddenly his head darted down, and he came up with a field mouse that he promptly ate.

On another occasion after a high tide the shore along the mud flats was strewn with the bodies of literally thousands and thousands of dungeness crabs, all of the same size. I never did find out what killed them. They were not molted shells, but intact crabs.

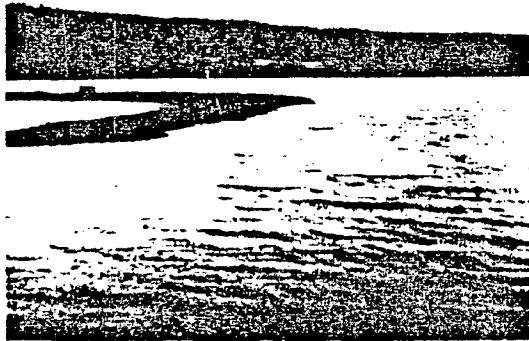
In early August I checked and weighed a 3-3/4 lb. rainbow trout caught in Dugwalla Lake. I also saw pictures of a 5 lb. rainbow taken here earlier in the summer. A common complaint though from fishermen was that though the fish were large, they tasted like JP5 fuel, and when cooking the smell was sometimes so strong their wives were reluctant to cook the fish. Oil and fuel leakage into this ecosystem from adjoining Naval Air Station has been an occasional problem.

In early December I had just checked a trapper by the name of Benjamin, and he walked over to reset a muskrat trap in Dugwalla Lake. He had just set the trap when a muskrat swam into the trap underwater and was caught fast. Needless to say, it scared the hell out of the unexpected trapper who was still holding onto the chain when the muskrat bit."

from the field notes of Wildlife Agent Anthony de la Torre



Dugualia Bay and Dike



Dugualia Lake and Marsh

"We have had covies of quail and Chinese pheasant here for years. Sometimes they'll come right into the yards and feed and we hear them other days in the brush and berry bushes. This is one of the few places on the north end that has carried nesting populations through the years."

Chuck and Bill Cooper, residents at Dugualia Bay

### Dugualla Bay

Dugualla Bay is located on the east shore of Whidbey Island north of the Naval Air Station at Oak Harbor. The land was identified as a wetland which is periodically flushed by saltwater at extreme high tides (figure 7). The land is separated from the beach by an elevated sandspit. One end of the spit is low enough to allow water passage during extreme high tides. The ground generally is soft and moist in the central portion of the site and becomes firmer and drier towards the spit and around the perimeter. Plants collected and identified indicate the influence of saltwater intrusion. Important saltwater marsh species include pickleweed (Salicornia virginica); dodder (Cuscuta suksdorfii), a plant parasite on pickleweed; orache (Atriplex patula); ragweed (Ambrosia psilostachya); bentgrass (Agrostis exarata); dunegrass (Elymus mollis); and meadow barley (Hordeum brachyantherum). Transition species include Pacific silverweed (Potentilla pacifica), red fescue (Festuca rubra), and bearded fescue (cf. Festuca subulata). Upland species grow on the spit and outer perimeter. Nootka rose (Rosa nutkana), yarrow (Achillea millefolium), and thistles (Cirsium vulgare) are the most prevalent upland species. A complete list of plants found at the Dugualla Bay site is provided by table 6. There are no trees in the marsh area or on the spit. The small plot of land appears to be quite productive and contains many plant species characteristic of salt marsh habitat.



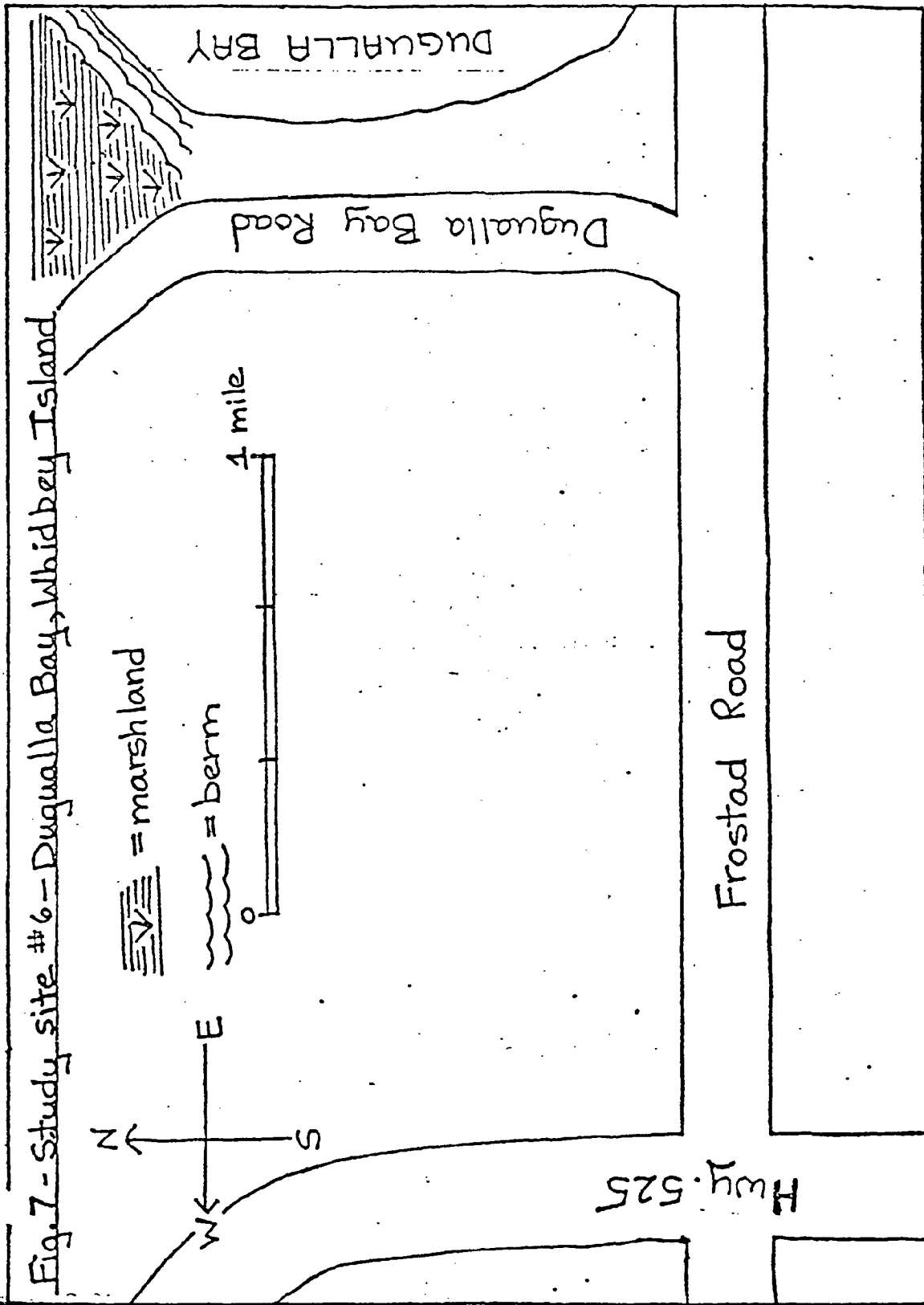


TABLE 6

PLANTS FROM SITE NO. 6 - DUGUALLA BAY

Berberidaceae

Berberis aquifolium Pursh

Chenopodiaceae

Atriplex patula L.

Salicornia virginica L.

Compositae

Achillea millefolium L.

Ambrosia psilostachya DC.

Cirsium vulgare (Sav.) Tenore

Grindelia integrifolia DC.

Cuscutaceae

Cuscuta suksdorfii Yuncker

Gramineae

Agrostis exarata L.

Elymus mollis Trin.

Festuca rubra L.

Festuca subulata Trin.

Hordeum brachyantherum Nevski

Liliaceae - Crockett Lake - roadside

Allium cernuum Roth

Rosaceae

Potentilla pacifica Howell

Rosa nutkana Presl.

5-16-85

IS CO

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WETLAND EVALUATION #IS 5-1 (OAK HARBOR)

LOCATION: NORTHEAST AND SOUTHEAST QUARTER OF SECTION 3,  
TOWNSHIP 32 NORTH, RANGE 1 EAST

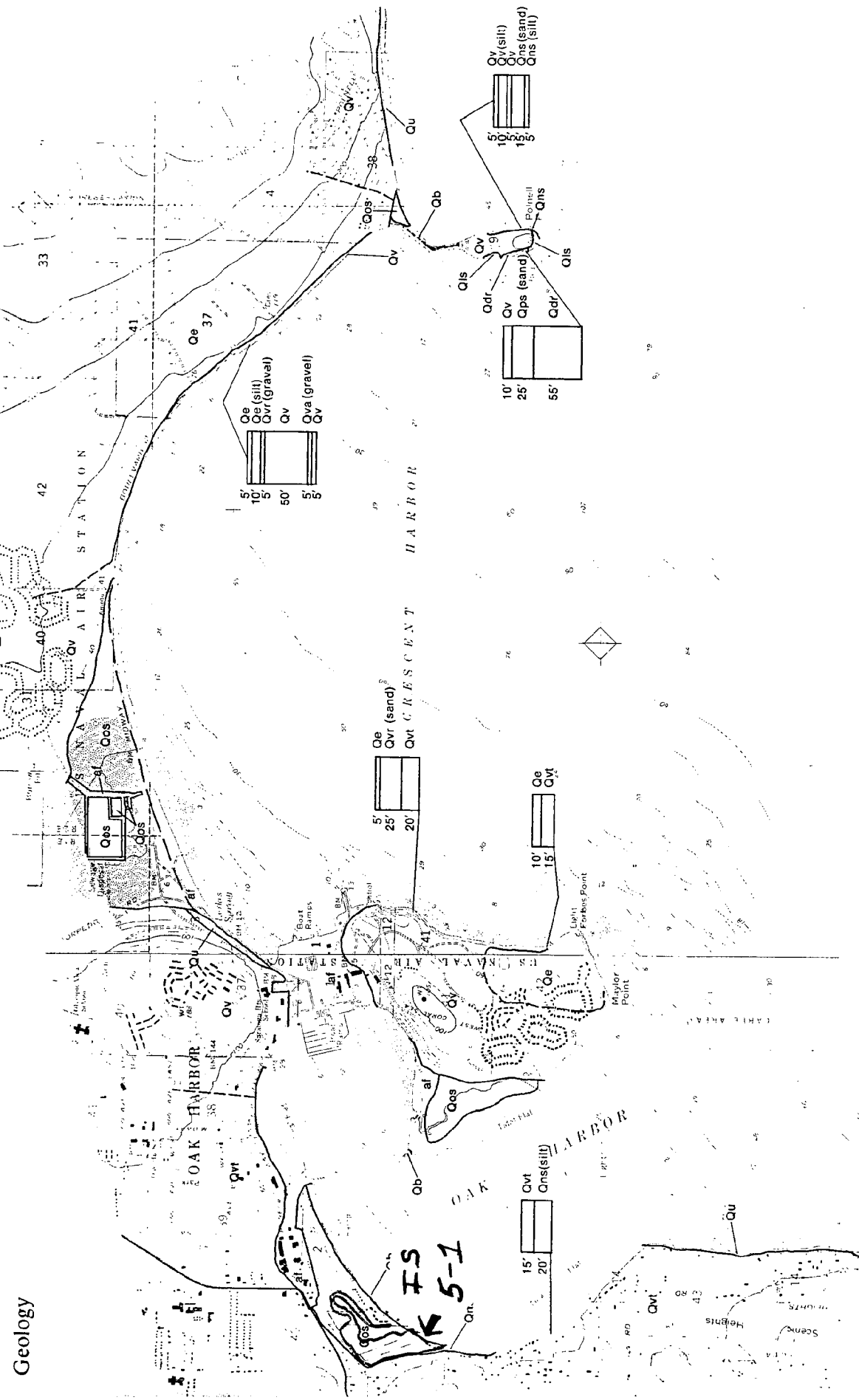
CZM MAP #: IS 5A (Area not shown as a wetland, but  
Geology map shows pet and organic soils  
instead.)

WETLAND CHARACTERISTICS: This is a low lying coastal area, that is adjacent to the City limits of Oak Harbor. It has been left relatively undisturbed by urban development, although there are residences along the beach berm which separates this marsh from the bay. A dike was built to prevent tidal inundation, and tidegate regulates runoff that is carried through canals and ditches in the marsh. The tidegate, apparently, is not in good repair as there are salt tolerant plant species in evidence all the way back to where the upland areas begin. The large ditch leading to the tidegate conveys saltwater during high tides. To the West, the saltwater influence diminishes and freshwater wetland plants, predominantly Juncus effusus, are found. The owner is able to put cattle out to graze in this area during the summer, and consequently, a great deal of disturbance occurs. The saltwater influenced area is fenced and cannot enter. For this reason more fragile plant species are able to exist. Characteristic saltmarsh vegetation include, Cotula coronopifolia (Brass Buttons), Scirpus maritimus (Saltmarsh bulrush), Distichlis spicata (salt grass), and Triglochin maritimum (arrow grass). As one approaches the uplands, which rise in a fairly steep incline to the Northwest and Southwest, cattails and other freshwater wetland species are in evidence.

WETLAND VALUES: The area that is pastured does support migratory birds and shorebirds as there is a large ponded area during much of the year. Nevertheless, the presence of cattle greatly diminishes the value for wildlife. The portion that is fenced from the cattle and influenced by saltwater, provides more cover but less ponded water. During site inspection evidence of a fairly large mammal, perhaps a river otter, was found along the main ditch. Since people do not frequent this area, it is a relatively unique wilderness close to the City of Oak Harbor.

Runoff from the City is carried through the ditches in the marsh, and it is possible that the organic soils do function to cleanse the water before it enters the marine environment. The area also absorbs flooding preventing damage to houses on the berm.

Geology





WETLAND EVALUATION #IS 7-1 (Penn Cove Road)

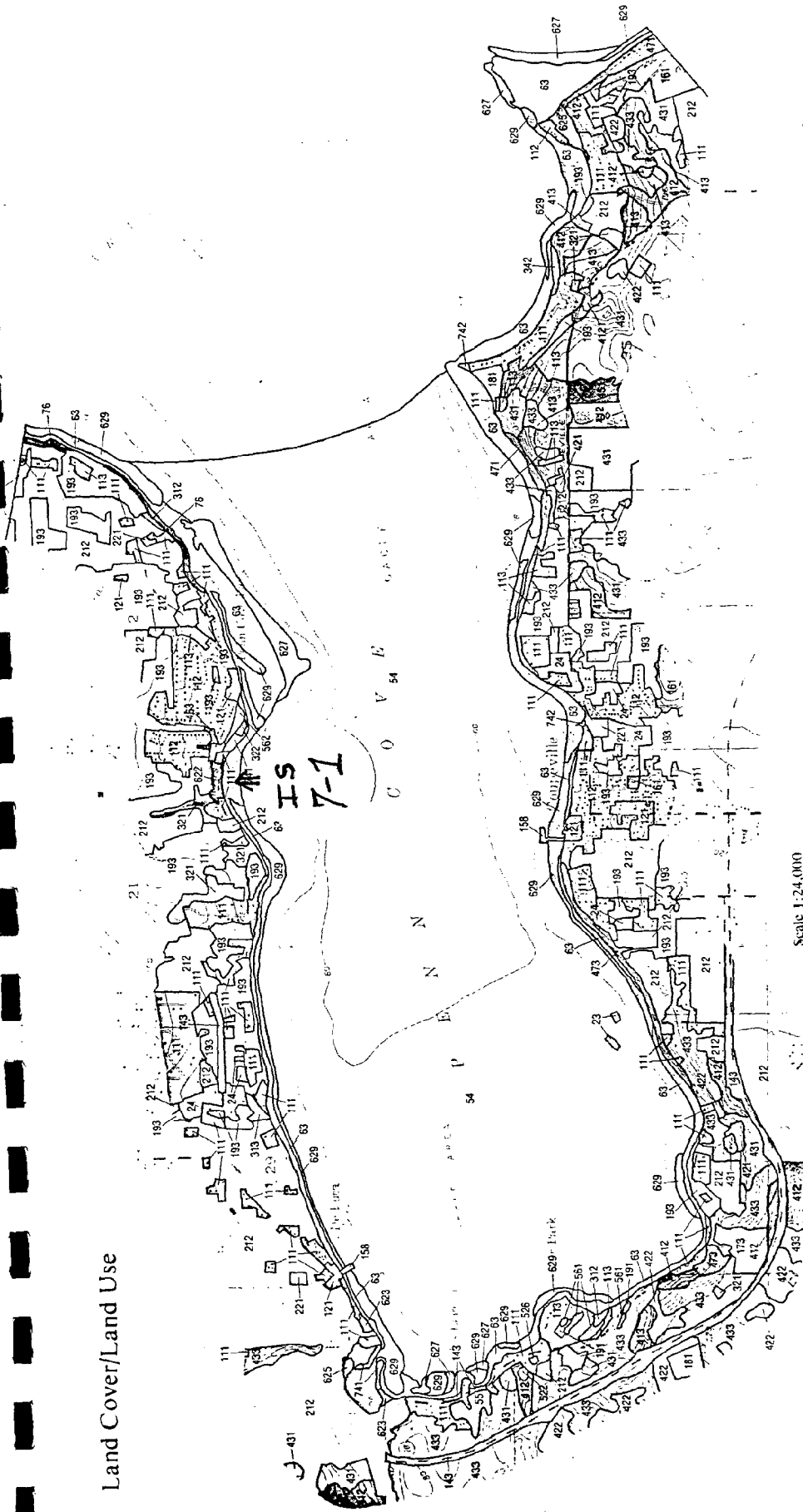
LOCATION: SOUTHEAST SECTION 21, TOWNSHIP 32N, RANGE 1E.

CZM ATLAS MAP NUMBER: IS 7 (WETLAND NOT INDICATED)

WETLAND CHARACTERISTICS: The marsh extends in an east/west direction about 500 feet along Penn Cove Road, near the juncture with Monroe Landing Road. It widens from 100 feet at the west end to 200 feet at the east. It is characterized primarily by a salt tolerant plant community, grading to freshwater at the northwest end where a creek enters the system. Salt marsh plant species include dense stands of Scirpis maritimus (salt marsh bulrush), Distichlis spicata (salt grass) and Potentilla pacifica (silver weed). Salt water probably infiltrates under the road which separates this marsh from the adjacent tideflats. The freshwater community is predominantly Typhus latifolia (cattails). The edges of the marsh are well defined. Wild rose hedges on the north and west mark the extent in this direction and the road defines the southern boundary. The marsh drains to the east through a culvert under Monroe Landing Road and then enters a driftwood clogged lagoon leading to Penn Cove.

WETLAND VALUES: The creek entering the wetland carries runoff from an area used for pasturing cattle and residential development. Along most reaches of the creek it is evident that cattle have been able to get down to the stream bed. Under these conditions, contaminant and nutrient contributions eventually end up in the marsh, which in turn acts as a settling pond/water quality control before the water drains into the marine environment. In addition, the cattails and saltmarsh provide habitat and forage for birds and small mammals.

# Land Cover/Land Use



Coastal Zone Atlas of Washington IS 7B

Island County



# Coastal Flooding

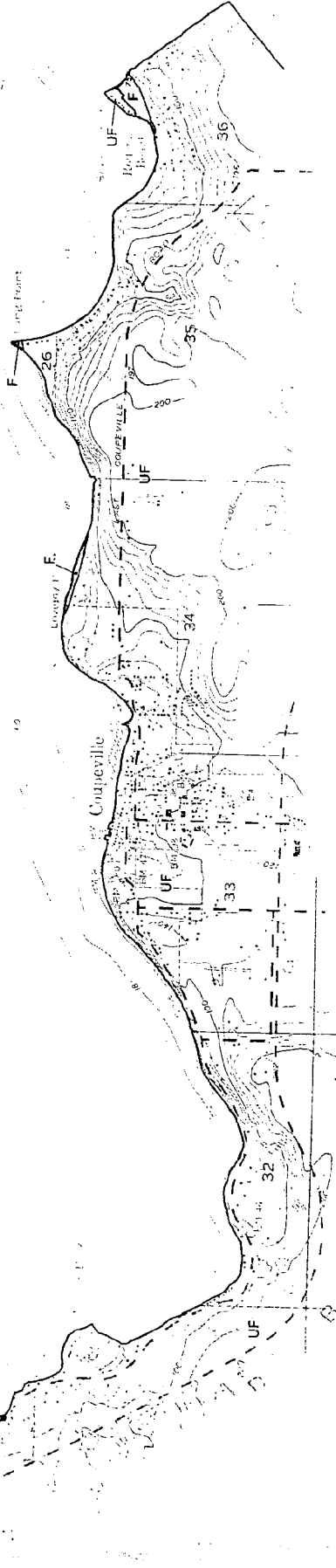
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7-1

C O V E AREA

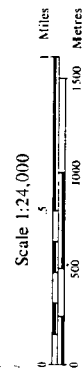
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Scale 1:24,000



Washington  
photographic  
laboratory

Coastal Zone Atlas of Washington IS 7A

Island County

5-16-85

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WETLAND EVALUATION: #IS 9-1 (Perego's Lagoon)

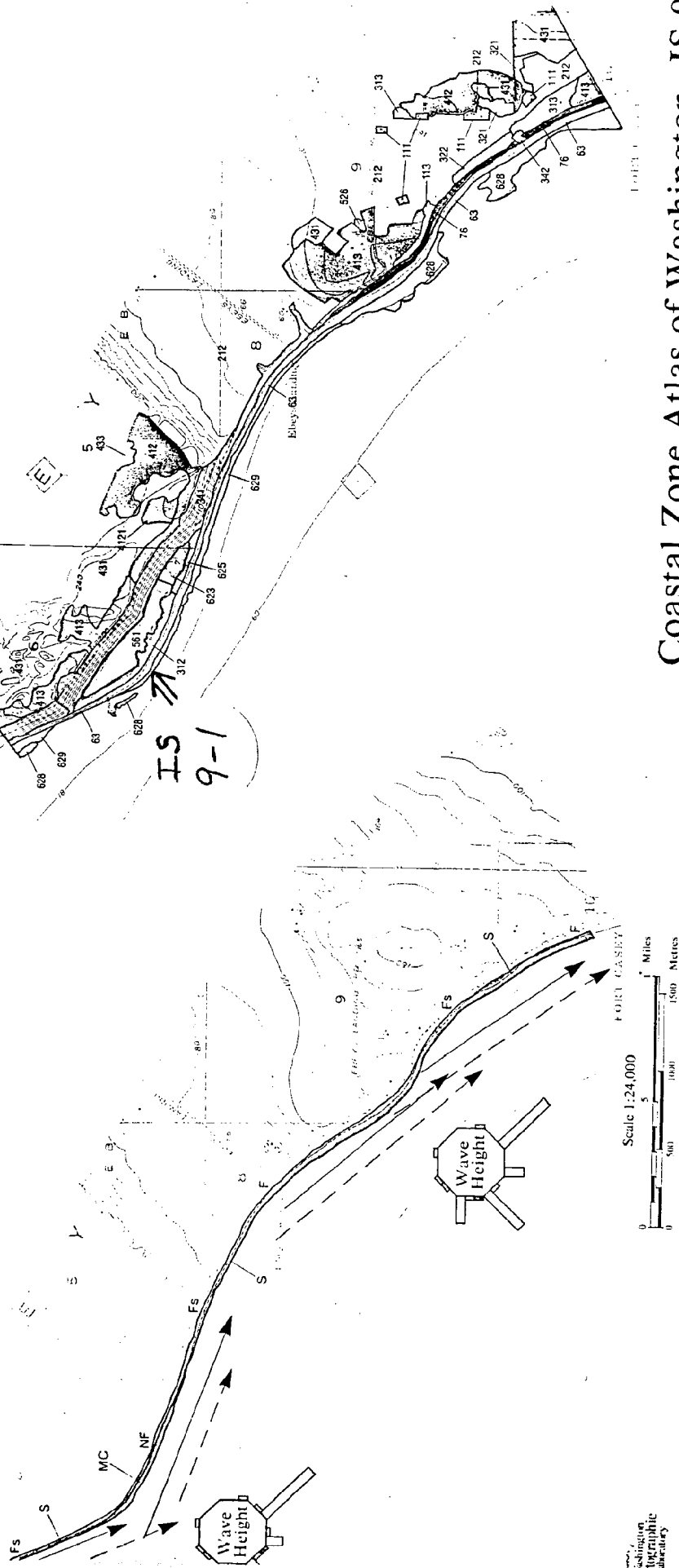
LOCATION: SECTION 6, TOWNSHIP 31N, RANGE 1E.

CZM ATLAS MAP #: IS 9

WETLAND CHARACTERISTICS: See Attachment --

1. Perego's Lagoon, in Puget Trough Coastal Wetlands, prepared by Linda Kunze for the Washington Natural Heritage Program of the Washington Department of Natural Resources, January 1984.

WETLAND VALUES; Perego's Lagoon is now part of Ebey's Historical Reserve which is frequented by many visitors who are able to approach the lagoon both along the shore or by way of a high bluff trail. Given the degree of human impact to the area it is not expected to function as a wildlife refuge. However, shorebirds and waterfowl do frequent the area, particularly in off season months.



## PEREGO'S LAGOON

### LOCATION:

Island County; T31N, R1E, portions of section 6. The site is located on the west side of Whidbey Island between Admiralty Head and Point Partridge (Fig. 25).

### SIGNIFICANCE:

Perego's Lagoon is a high quality berm and lagoon system.

### GENERAL DESCRIPTION:

Figure 26 illustrates the distribution of features of Perego's Lagoon. The features are:

1. a berm;
2. a lagoon pond; and
3. a sandy, high salinity, low intertidal marsh.

The area is approximately 52 acres. The lagoon is behind a berm which extends along the base of a steep grassy bluff. Substrates of the lagoon system are primarily sandy gravels. At the southeast end of the lagoon pond, the substrate is overlain by black, sometimes anoxic organic matter. Driftwood has accumulated along the berm and at the southeast end of the lagoon.

The berm was breached at its northwest end by storm tides in December, 1982. A 1981 aerial photograph shows the berm intact, without a channel between the lagoon and the Strait of Juan de Fuca. A 1978 aerial photo also shows a series of small berms, lagoon ponds, lines of driftwood and salt marshes within and at the southeast end of Perego's Lagoon. This pattern indicates the predominance of northwest winds and waves which carry driftwood and debris into the lagoon.

Perego's Lagoon appears to receive heavy shorebird and waterfowl use.

### FEATURES:

#### I. Berm

The berm forms an unvegetated, sand and gravel beach on the southwest side. Driftwood has accumulated along the top and leeward side of the berm. The leeward or lagoon side of the berm is vegetated with

typical sand dune species. The vegetation is diverse and apparently varies with substrate and the degree of natural disturbance. However, vegetational patterns are not distinct enough to define communities. The berm exhibits little evidence of human disturbance and non-native species have low cover values and frequency.

#### Berm vegetation (mapping symbol 1)

##### Dominant Species

*Elymus mollis* (dune wildrye)  
*Festuca rubra* (red fescue)

##### Minor Species

*Abronia latifolia* (yellow sandverbena)  
*Achillea millefolium* (yarrow)  
*Ambrosia chamissonis* var. *bipinnatisecta* (silver bursage)  
*Armeria maritima* (thrift)  
*Atriplex patula* var. *hastata* (saltbush)  
*Carex macrocephala* (large headed sedge)  
*Convolvulus soldanella* (beach morning-glory)  
*Grindelia integrifolia* (gumweed)  
*Lepidium virginicum* var. *menziesii* (tall pepperweed)  
*Lomatium nudicaule* (barestem lomatium)  
*Lupinus littoralis* (shore lupine)  
*Orobanche californica* (California broomrape)  
*Plantago lanceolata* (English plantain) (non-native)  
*Poa pratensis* (Kentucky bluegrass) (non-native)  
*Polygonum paronychia* (nailwort knotweed)  
*Rosa nutkana* (Nootka rose)  
*Sambucus* sp. (elderberry)  
*Vicia gigantea* (giant vetch)

## II. Lagoon Pond

Prior to December, 1982, the lagoon pond was completely enclosed by the berm and adjacent upland bluffs. It had been described by Cook (1973) as a brackish lake. From vegetation presently occurring around the pond's margins, it is probable that the lagoon, prior to breaching, was at least polyhaline and may have reached hyperhaline levels. Since the breaching, marine waters flood the lagoon with each high tide. Fresh-water influence is limited to runoff from adjacent uplands. Salinities within the lagoon pond are now probably euhaline.

### III. Sandy, High Salinity, Low Intertidal Marsh

Marsh development is primarily at the southeast end of the lagoon and along the southern lagoon margin. Areas of the marsh, particularly at the southeast end of the lagoon appear naturally disturbed or abraided, probably by driftwood. There is a large driftwood accumulation at the southeast end of the lagoon, but aerial photographs indicate this to have been more extensive in the past. Substrates are composed of sands overlain by organic matter. Two plant communities are present here. One is pure Salicornia virginica; the other is codominated by Distichlis spicata and Salicornia virginica.

Salicornia virginica (pickleweed) monospecific community  
(mapping symbol 2)

Distichlis spicata-Salicornia virginica community (mapping symbol 3)

#### Dominant Species

Distichlis spicata (saltgrass)  
Salicornia virginica (pickleweed)

#### Minor Species

Atriplex patula var. hastata (saltbush)  
Spergularia canadensis (winged sandspurry)

### LAND USE HISTORY:

Perego's Lagoon is named after its first landowner, George W.S.H. Perego, who claimed the land about 1876. The lagoon appears to have received very little use since that time. The adjacent uplands have been heavily grazed in the past. Washington State Parks acquired the northern half of Perego's Lagoon in 1982. The National Park Service is in the process of buying the uplands adjacent to that portion of the lagoon newly acquired by State Parks. This area is to be managed as part of Fort Ebey State Park and Ebey's Landing National Historic Reserve. The remainder of the lagoon and adjacent uplands are privately owned with no apparent threat of development. Currently, day use is made of the site, though this appears somewhat limited by restricted access.

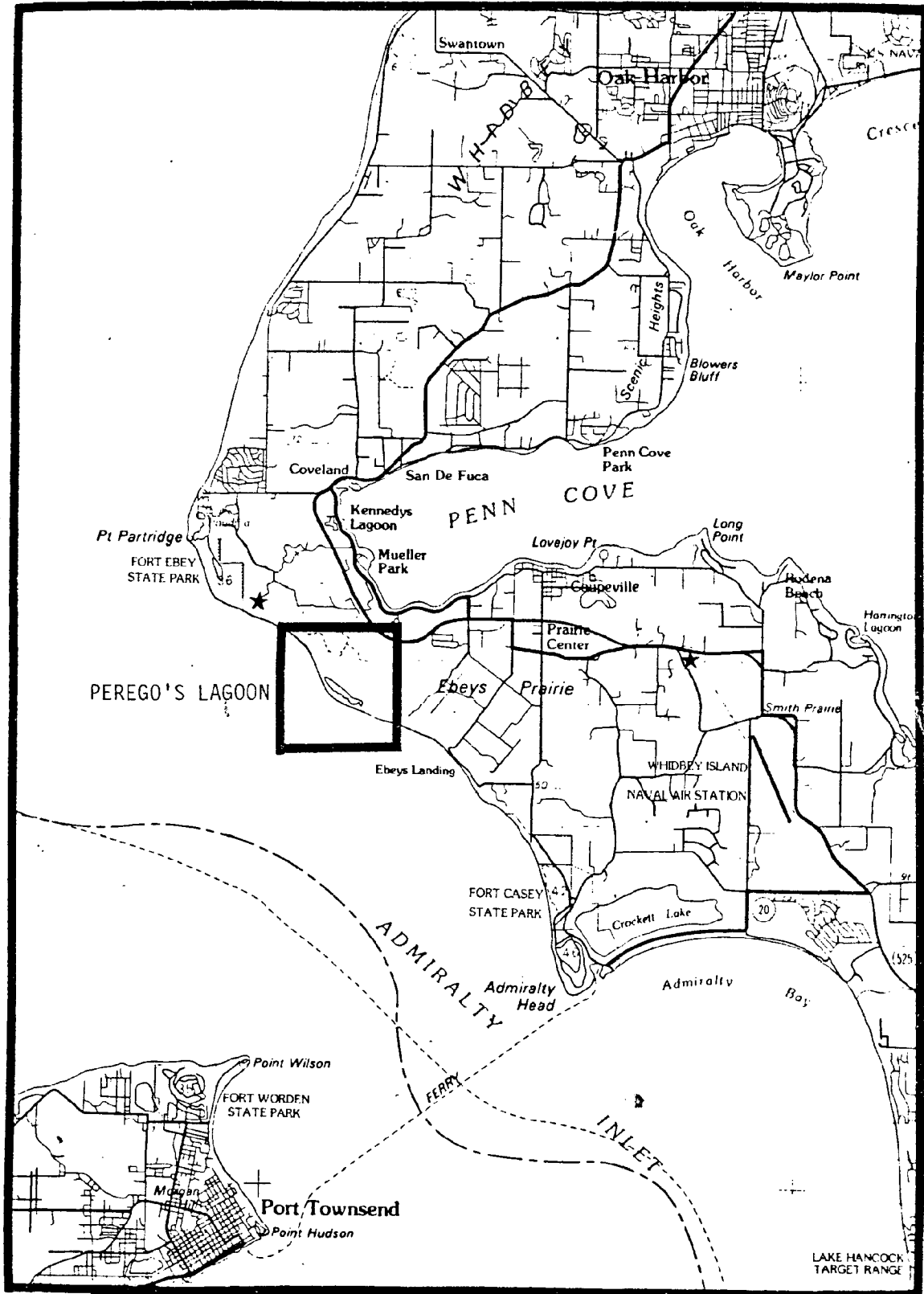


Figure 25. PEREGO'S LAGOON LOCATIONAL MAP



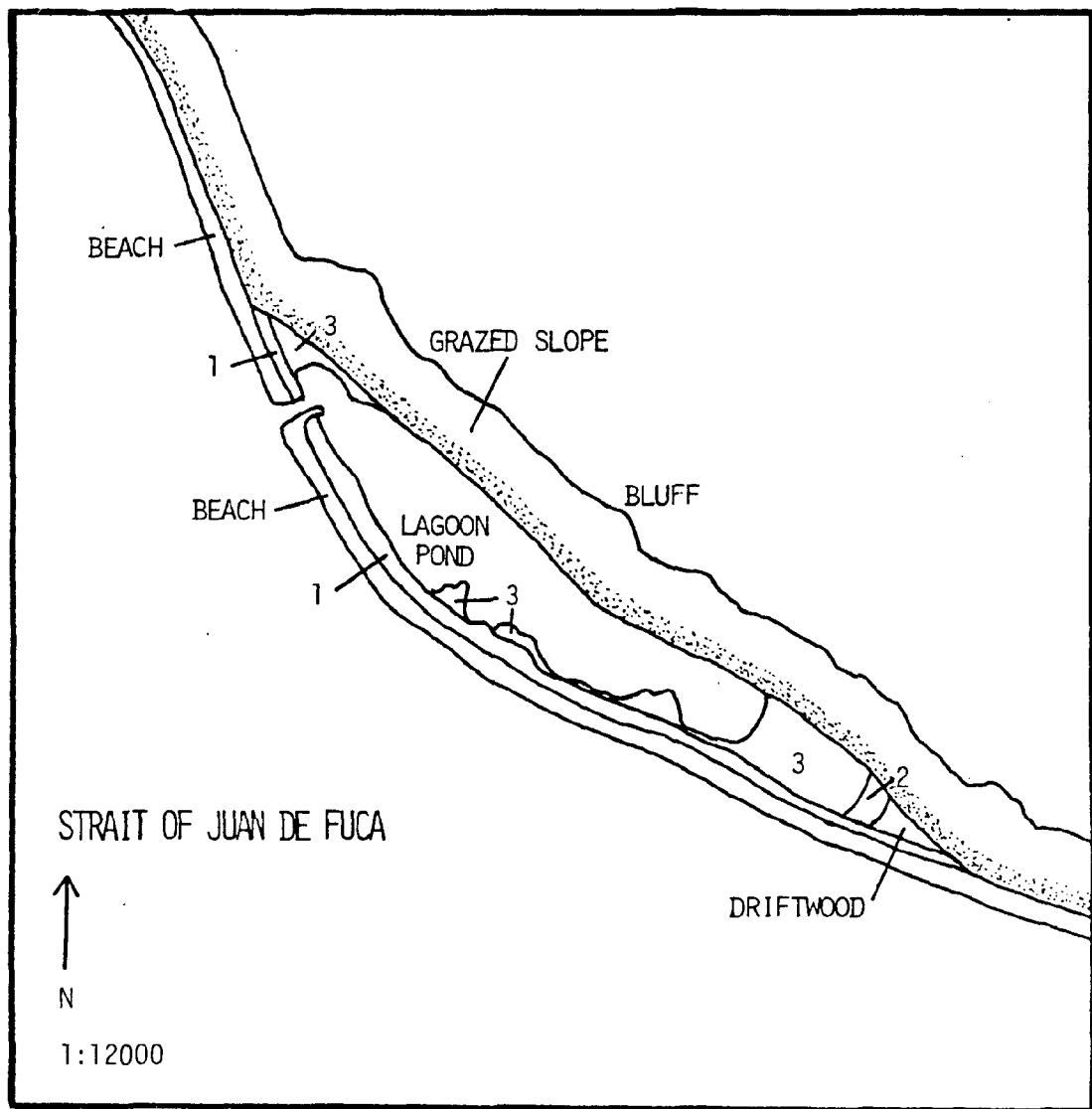
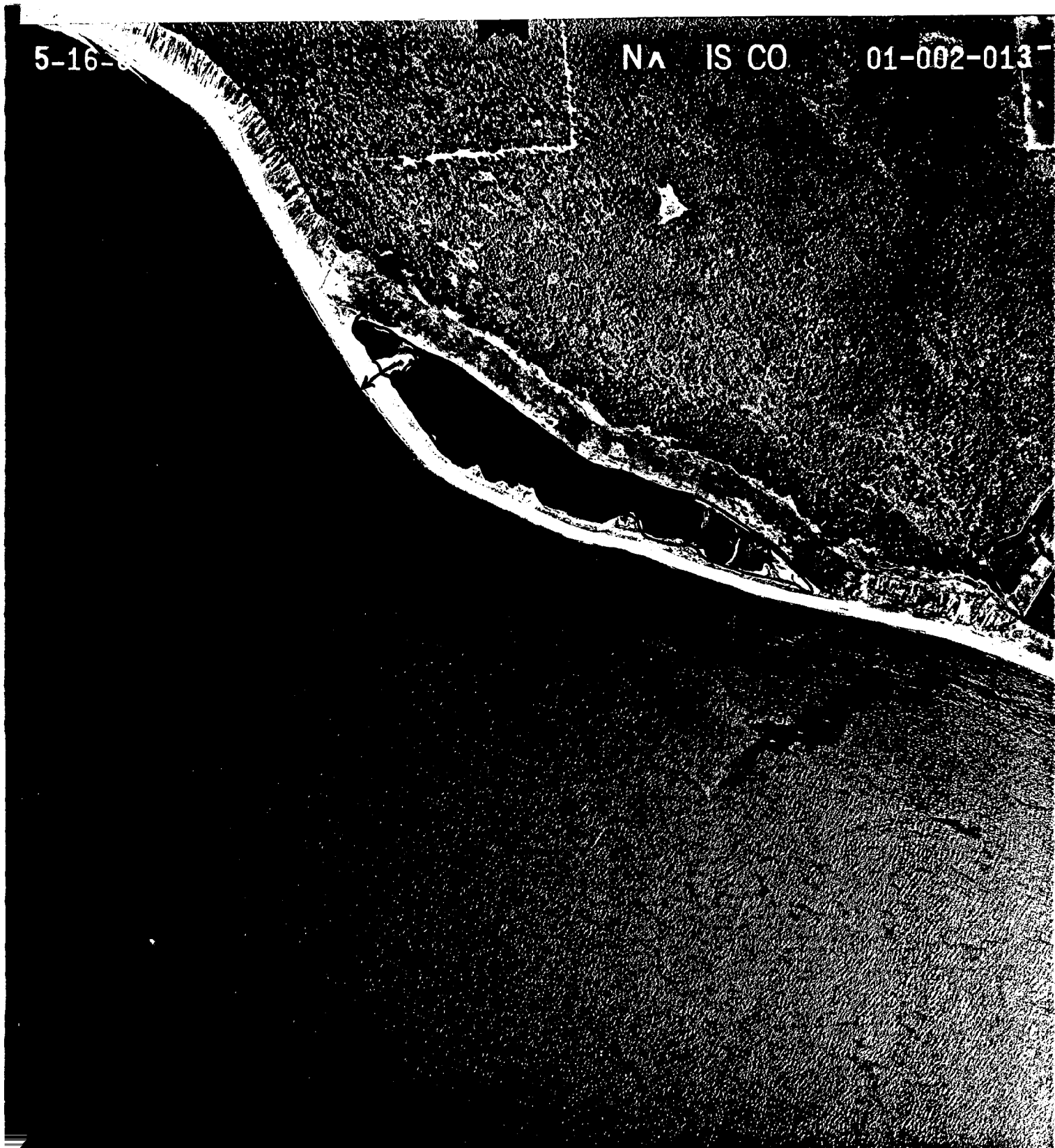


Figure 26. PEREGO'S LAGOON FEATURES MAP

5-16-

NA IS CO

01-002-013-



WETLAND EVALUATION: IS 10-1 (Crocket Lake)

LOCATION; SECTION 14 AND 32, TOWNSHIP 31N, RANGE 1E

CZM ATLAS MAP #: IS 10

WETLAND CHARACTERISTICS AND VALUES: See Attachment:

1. Site #12: Crockett Lake and Vicinity, Whidbey Island  
Habitat Study, prepared by the Soil Conservation Service and  
the Washington Department of Game, 1979.



SITE #12: CROCKETT LAKE & VICINITYAPPROX. ACREAGE:

HABITAT: Brackish (salt/fresh) water lake, tidelands and marsh, bordered by light agricultural use, light residential, University Campus, State Park, and Neighboring woodlands.

VALUE: CRITICAL. This site still supports a wide variety of resident and migratory life forms, and potential for many more. Because of its central location on the Island, its proximity to the County seat, State Park, Ferry, and Seattle Pacific University Fort Casey Campus, it offers a great potential for recreational/educational use. This site is also widely used by countless vacationers, bird watchers and naturalists, artists, photographers, beach combers, picnickers, environmental and science students, botanists and lovers of wild flowers. The underwater park and adjacent waters draw skin divers from miles round. In season, the area is utilized by hunters and trappers. Local residents enjoy the diversity year round. Fishermen enjoy the salmon and bottom fishing available here, and recently both Crockett Lake and the two County gravel pits across from it, have been planted with rainbow trout. This area offers "something for everyone", and inspite of heavy people pressure remains rich in life forms and in the relaxation and pleasure it imparts to all who visit it. Development here would be a sad and misguided mistake.

USE: HEAVY, and to increase with time.

ACCESSIBILITY: Excellent

PARTIAL LISTING OF SOME LIFE FORMS NOTED AT SITE:

This area is extremely rich in bird life. It offers a rich and varied blend of habitat types, ranging from shore and marsh, to grasslands, thence up into woodlands. The area offers some nesting cover, and is large enough that wildlife residents can subsist fairly unmolested year round.

Site #12:LIST OF BIRD SPECIES AT  
CROCKETT LAKEResident and/or Semi-Resident:

- |                         |                           |
|-------------------------|---------------------------|
| -Song Sparrow           | -Screech Owl              |
| -Fox Sparrow            | -Stellars Blue Jay        |
| -Savannah Sparrow       | -Winter Wren              |
| -Chipping Sparrow       | -Bewick's Wren            |
| -Gold Finch             | -Marsh Wren               |
| -Purple Finch           | -White Breasted Nut-hatch |
| -House Finch            | -Brown Creeper            |
| -White Crowned Sparrow  | -Pacific Bush-tit         |
| -Robin                  | -Ruby Crowned Kinglet     |
| -Golden Crowned Sparrow | -Golden Crowned Kinglet   |
| -Swanson Thrush         | -Rufous Hummingbird       |
| -Varied Thrush          | -Northern Shrike          |
| -Brewers Blackbird      | -Pileated Woodpecker      |
| -Redwing Blackbird      | -Red Shafted Woodpecker   |
| -Cow Bird               | -Downy Woodpecker         |
| -Crow                   | -Hairy Woodpecker         |
| -Meadow Lark            | -Pine-siskin              |
| -Horned Lark            | -Band Tailed Pigeon       |
| -Marsh Hawk             | -Mourning Dove            |
| -Red Tailed Hawk        | -Cedar Waxwing            |
| -Sharp-shinned Hawk     | -Evening Gross-beak       |
| -Coopers Hawk           | -Black headed Gross-beak  |
| -Sparrow Hawk           | -Red Cross-bill           |
| -Bald Eagle             | -Olive sided Flycatcher   |
| -Osprey                 | -Western Wood Pee-Wee     |
| -Great Horned Owl       |                           |

Migratory (Some Resident):

- |                       |                           |
|-----------------------|---------------------------|
| -Great Blue Heron     | -Red necked Grebe         |
| -Bittern              | -Willet                   |
| -Glaucous Winged Gull | -Black Backed Plover      |
| -California Gull      | -American Golden Plover   |
| -Ring-billed Gull     | -Ring Necked Plover       |
| -Bonaparte's Gull     | -Killdeer                 |
| -Common Tern          | -Cormorant - Brandts      |
| -Parasitic Jaeger     | -Cormorant - Pelajiac     |
| -Common Murre         | -Cormorant Double Crested |
| -Ancient Murrelet     | -Western Sandpiper        |
| -Pigeon Guillemot     | -Lesser Sandpiper         |
| -Puffin               | -Pectoral Sandpiper       |
| -Common Scoter        | -Mallard Duck             |
| -Surf Scoter          | -Harlequin Duck           |
| -White Winged Scoter  | -Scaup Duck               |
| -Sanderling           | -Ringnecked Duck          |
| -Greater yellow-legs  | -Wood Duck                |
| -Lesser yellow-legs   | -Green Winged Teal        |
| -Black Turnstone      | -Pintail                  |
| -Pacific Loon         | -Widgeon                  |
| -Western Grebe        | -American Coot            |

CROCKETT LAKE & VICINITY, SITE 12: (Cont.)OTHER WILDLIFE OF AREA:

Red Fox  
Muskrat  
Raccoon  
Garter Snake  
Cottontail  
Bats (seasonal, a variety)  
Insects (a great variety)  
Deer Mouse  
Norway Rat  
Mink  
Black-tailed Deer

TYPICAL FLORA OF SITE:

Oceanspray  
Himalayan Blackberry  
Fir  
Alder  
Grasses (a variety)  
Cattails  
Gumplant  
Wild Rose  
Vetch  
Hardback  
Snowberry  
Fireweed  
Stinging Nettle  
Oregon Grape  
Horsetail  
Red Elderberry  
Thimbleberry  
Salmonberry  
Thistle  
Bullrushes  
Daisy  
Beach Pea  
Goldenrod  
Catseye  
Bracken fern  
Pearly Everlasting  
Myrtle  
Queen Anne's Lace  
Salt Grasses  
Pacific Cinquefoil  
Nightshade  
Mullein  
Wild Mustard  
Glass Wort  
Yarrow

CROCKETT LAKE & VICINITY, SITE 12: (cont.)

INTERESTING FIELD NOTES:

Tourists overheard talking while waiting for the Keystone Ferry:

- #1: "Wow. Isn't that one hell of a sunset?"  
#2: "Fantastic, look at those creams and pinks and even brilliant aqua. Truly one of the best I've ever seen; really takes the 'ol breath away."  
#1: "Yeah, kind of makes you feel like you want to have a beer, doesn't it?"

. . . . .

"We have seriously considered a number of alternatives for our land holdings here, among them the possibility of devoting a good portion of our property to public use. But frankly, it's tough to give a darn about the public when we see so many people have no respect for private property. Again and again they've torn down our signs, vandalized our property, and left their junk and litter everywhere they please. . ."

(from correspondence and observations of Edgar Shultz and Bud Waggoner, co-owners of much of Crockett Lake and adjoining property, as related to State Wildlife Agent Anthony de la Torre)

. . . . .





Crockett Lake

"Some days I'll sit huddled up out here in the blind all day, alone with just my dog, and hardly get a shot at a duck. On those nasty winter days, I usually have the lake all to myself. Dark clouds will be billowing overhead, and the gray waters flashing around, all foam and twenty shades of gray. The raw wind will be laying the brown grasses flat, and cut me to the bone till I'm near froze. But you know, I love it. I must be half crazy, because I keep coming back. But coming out here then, it's like you're caught up in something elemental. . . ."

(personal reflections of an aging duck hunter, shared with Wildlife Agent de la Torre, who stopped to check him in the field on one particularly nasty day during the 1978 duck season)



WETLAND EVALUATION: IS 11-1 (North Bluff Road)

LOCATION: SECTION 28, TOWNSHIP 23N, RANGE 1E.

CZM ATLAS MAP #: IS 11 (WETLAND NOT INDICATED)

WETLAND CHARACTERISTICS: This lagoon is located behind an accretion beach berm. It drains through meandering tidal channels to the north. A robust saltmarsh community thrives in this protected environment. Predominant species include: Triglochin maritimum (arrow grass); Jumea carnosa (fleshy jaumea); Cotula coronopifolia (brass buttons); Spergularia marina (saltmarsh sandspurry); Aster subspicatus (Douglas aster); Atriplex patula (fat hen); Distichlis spicata (salt grass); and, Grendelia intergrifolia (gum weed).

During higher high tides the saltmarsh is entirely innundated. Consequently it supports a wide range of marine invertebrates, fish and waterfowl.

WETLAND VALUES: Four ownerships encompass the marsh and three walkways have been built on piling to allow access to the beach. This keeps pedestrian traffic off the marsh and thereby diminishes human impact. As a result the saltmarsh remains relatively undisturbed and functions in a maximum capacity. Not only can juvenile fish enter this system during high tide to forage for food, but the tide carries off excess carbon production which in turn contributes to nearshore productivity. During low tide, the area provides food and habitat for a multitude of marine invertebrates and shorebirds.

In the past shoreline accretion has blocked the outlet to Saratoga Passage, creating stagnant, brackish conditions in the lagoon. A few years back a storm breached the berm and local residents have endeavored to keep it open as they prefer the flushing activity of the tides and wish to maximize the values of the saltmarsh.



5-16-85

LA IS CO

01-009-223



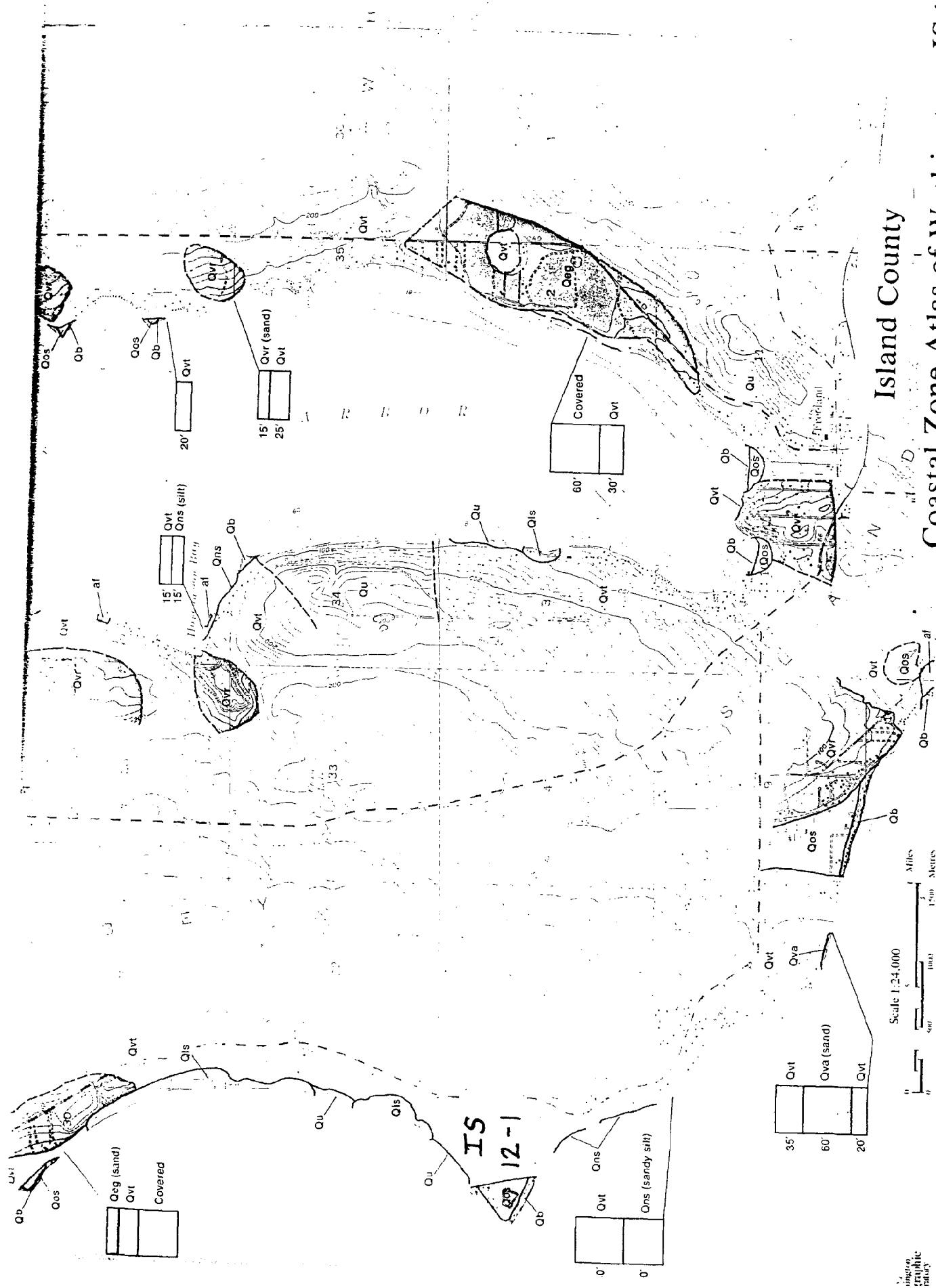
WETLAND EVALUATION IS 12 - 1 (Bush Point)

LOCATION: SECTION 6, TOWNSHIP 29N, RANGE 1E

CZM ATLAS MAP #: IS 12

WETLAND CHARACTERISTICS: The marsh area is behind the berm of a cusped spit. Residential Development along the shoreline and to the north has involved filling of portions of this system. What remains is an open water area, approximately 3 acres in size, with emergent vegetation around its perimeter and adjacent saturated soils characterized by Scirpus acutus (hardstem bulrush), Potentilla pacifica (silver weed), Typha latifolia (cattail) and Eleocharis sp. (spike rush).

WETLAND VALUES: The plant species indicate that the marsh is predominantly freshwater influenced with some saltwater intrusion across the berm on the shoreline. This indicates that upland runoff is being collected here before draining into Puget Sound. Water quality values are high, particularly as this area is heavily developed and aside from the roads and garden chemicals which undoubtedly contribute contaminants and nutrients into this system, all of the homes are on septic systems. In this capacity the marsh acts as a settling pond and plants remove some of the nutrients before the water drains into Puget Sound. It also provides storm water retention, wildlife habitat and aesthetic amenities to the Bush Point Community.



5-16-85

NA IS CO

01-008-182





WETLAND EVALUATION #IS 12 - 2 (Mutiny Riviera/Sands Bog)

LOCATION: SECTION 9, TOWNSHIP 29N, RANGE 2E

CZM ATLAS MAP #: IS 12 (WETLAND NOT INDICATED)

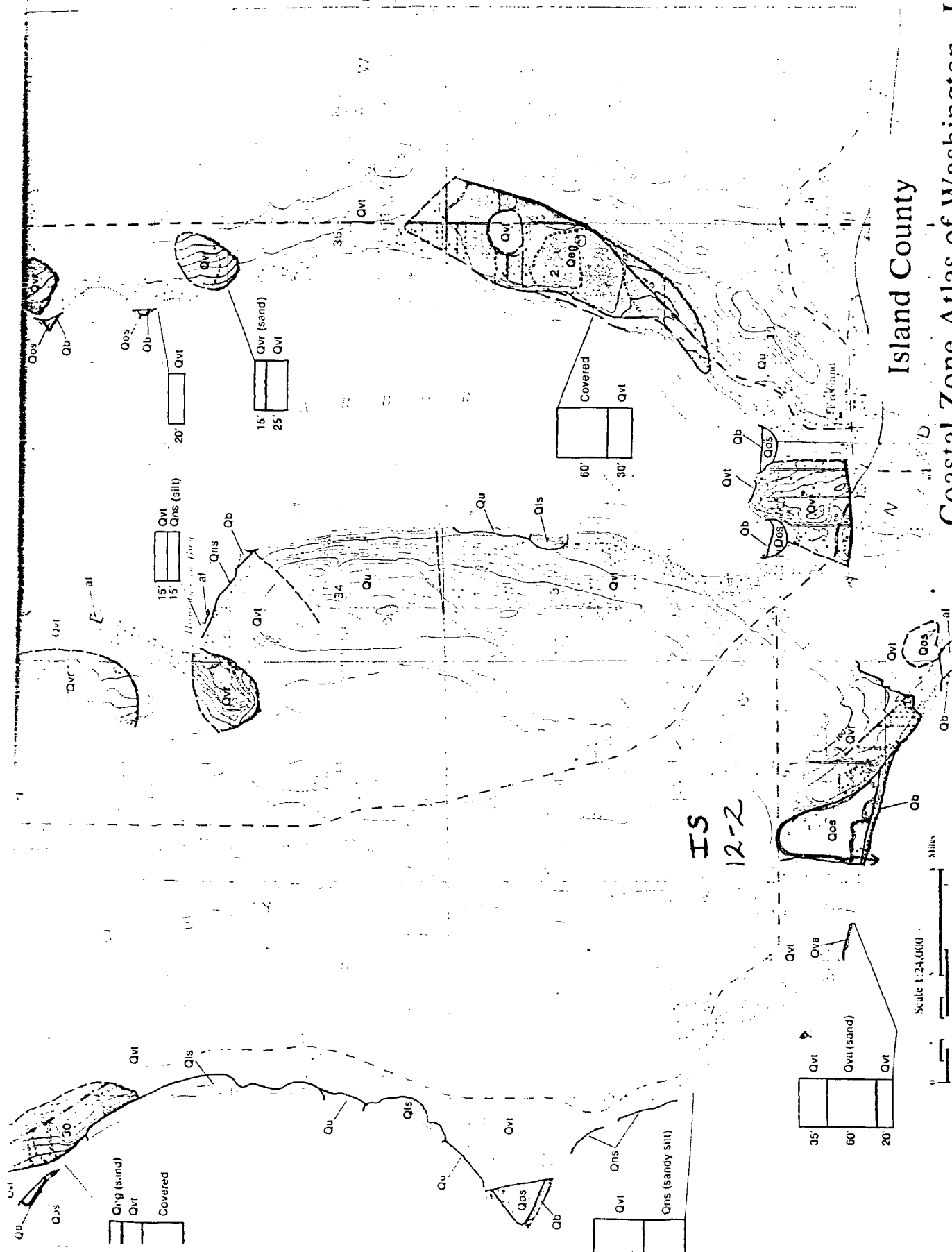
WETLAND CHARACTERISTICS: This area is a large bog characterized by Tacoma and Rifle Peat 0-2% slope. It grades from fresh to saltwater influence, north to south respectively.

Site inspection determined that a malfunctioning tide gate in the Mutiny Riviera development is responsible for saltwater entering the major drainage channel to the bog. The result is that the peat absorbs the incoming tide and for some distance northward the bog supports salt tolerant species, including; Distichlis spicata (salt grass), Potintella pacifica (silver weed), Cotula coronopifolia (brass buttons) and several speices of sedge.

Northerly of this influence, the owner has been able to cultivate portions of the bog. Ditches grid the area, lowering the watertable sufficiently to support crops. However, the dry area can be deceptive, as a local contractor discovered, when he endeavored to clean out some of the ditches. The half submerged backhoe is still in evidence as of this writing, although it is sinking slowly into the peat. Apparently the cost of trying to extricate the equipment, exceeded the value of the machine. All fluids and oil were removed as per EPA ruling and the backhoe left to its fate.

WETLAND VALUES: The bog functions as a huge reservoir and absorbs runoff from a large drainage basin to the north. As such it provides water quality controls and flood storage capacity. Should the tidegate be repaired the salt water influence would be eliminated and thereby presumably the shoreline jurisdiction over this bog. Without saltwater influence the marsh would be outside the 200 foot boundary along the shoreline.

## Coastal Zone Atlas of Washington





WETLAND EVALUATION # IS 12-3 (Nichols Bros. Marsh)

LOCATION: SECTION 10, TOWNSHIP 29N, RANGE 2E.

CZM ATLAS MAP #: IS 12

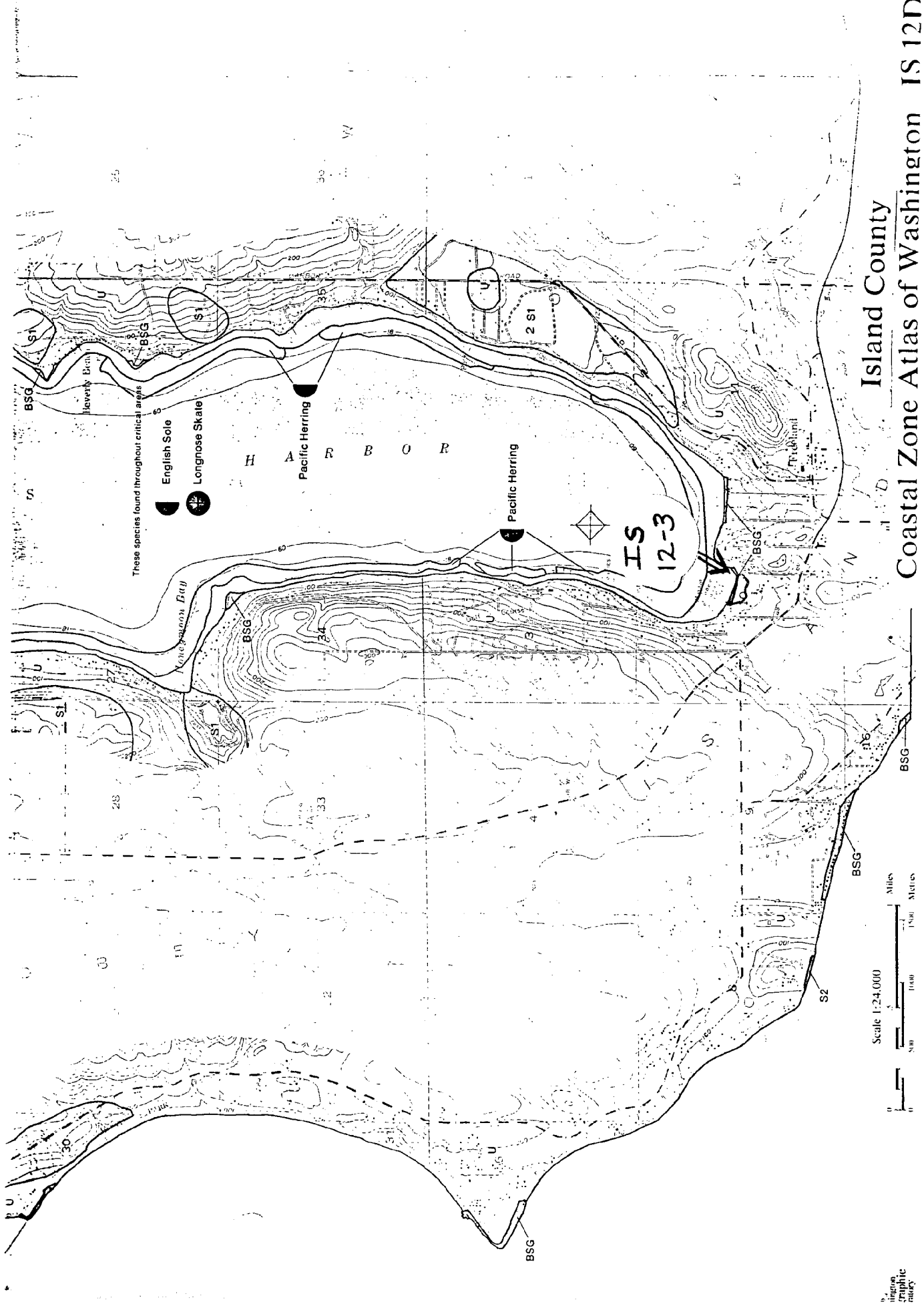
WETLAND CHARACTERISTICS: Soils in this area are Tacoma Peat, 0-2% slope, which develop in association with coastal beaches and are comprised mostly of the remains of salt tolerant grasses and sedges. Vegetation at the site is extremely varied.

Along the Holmes Harbor side of the property there is a predominance of saltmarsh vegetation. Atriplex patula (fat hen), Triglochin maritimum (arrow grass), Distichlis spicata (salt grass) and Salicornia virginica (pickle weed) are all represented. Saltwater appears to be infiltrating under Bayview Road and perhaps through malfunctioning tidegates. The salt tolerant vegetation grades into a freshwater marsh to the south. The area receives upland runoff from a drainage basin about an acre in size. Typha latifolia (cattails) is characteristic of the freshwater portion of the marsh, although Oenanthe sarmentosa (water parsley) and Lysichitum americanum (skunk cabbage) are also represented.

There are two distinct areas which do not support wetland plants. The first is a ridge which runs roughly east/west. It is vegetated with alders, firs and typical northwest forest understory plants. Another area in the north central portion of the marsh supports upland grasses.

The marsh drains through tidegates at the northeast and northwest corners. A narrow, open water canal meanders through the cattails and saltwater influenced area. Water collects in a ditch alongside Bayview Road and then out the tidegates.

WETLAND VALUES: The marsh supports some wildlife, mostly shorebirds and waterfowl. The area is considered less than an ideal habitat as it is located next to the Nichols Brothers Boatyard. Loud, sharp noises are frequent and of long duration. The area does function as a water quality control for upland runoff and provides some flood storage capacity.



Island County

Coastal Zone Atlas of Washington IS 12D

Exhibit A / WA 14/85

— wetland edge as shown  
on overlay map  
--- wetland edge as determined  
during site inspection 8/85  
areas that do not support  
wetland plants

THE  
NICHOLS  
BROTHERS

ROYAL AVENUE

NICHOLS  
WETLAND  
APPEAL

14/85

WETLAND EVALUATION: IS 12-4 (Dines Point)

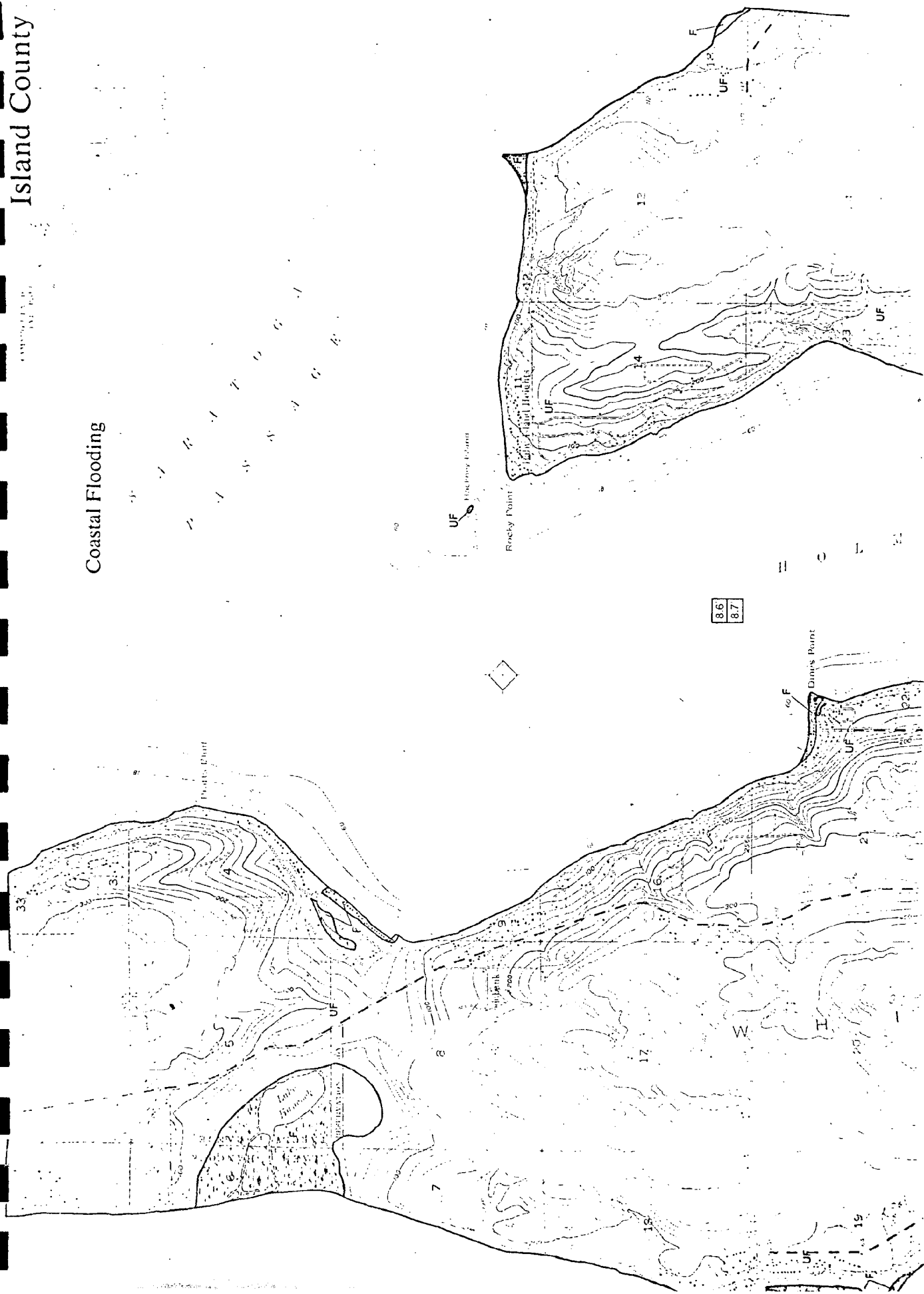
LOCATION: SECTION 22, TOWNSHIP 30N, RANGE 2E.

CZM ATLAS MAP #: IS 12

WETLAND CHARACTERISTICS AND VALUES; See attachments

1. Letter from Mary Burg, Department of Ecology, Wetlands Ecologist. Date 5/22/85.
2. Letter from Bob Ziegler, Department of Game, Applied Ecologist. Date 9/11/85.
3. Memorandum for the record, U.S. Army Corps of Engineers, Date 9/27/85.
4. Report prepared by Dr. Kenneth Raedeke, Date 12/6/85.
5. Report prepared by Marc Boule, Shapiro and Associates, Date 12/18/85.

Coastal Flooding





5-16-85

NA IS CO

02-011-016



ANDREA BEATTY RINKER  
Director



STATE OF WASHINGTON  
DEPARTMENT OF ECOLOGY

Mail Stop PV-11 • Olympia Washington 98504-8711 • (206) 454-6100

RECEIVED  
MAY 23 1985  
PLANNING DEPT.

May 22, 1985

Ann Dold  
Island County Planning Department  
P. O. Box 698  
Coupeville, WA 98239

Re: Hastings/Dines Point Property

Dear Ms. Dold:

Based on our inspection of the property on Dines Point on May 15, 1985, I have the following comments as to the type and extent of wetlands on the site. The eastern half of the swale is a salt or brackish water wetland characterized by a typical assemblage of salt tolerant wetland plant species. These species include pickleweed (*Salicornia virginica*), gumweed (*Grindelia integrifolia*), salt grass (*Distichlis spicata*), and seaside arrow grass (*Triglochin maritimum*). This wetland plant community presently extends westward from the edge of the landfill to an imaginary N-S line drawn approximately from the western end of the dilapidated long house, southward to the toe of the roadbed.

If you have any questions or need further information or assistance with this matter, please contact me.

Sincerely,

*Mary E. Burg*

Mary E. Burg  
Wetlands Ecologist  
Shorelands Division

MEB:sc

JACK S. WAYLAND  
Director



STATE OF WASHINGTON  
DEPARTMENT OF GAME

600 North Capitol Way, GJ-11 • Olympia, Washington 98504-0091 •

Subject SDP 2685  
Exhibit 19  
Date 10/24/85  
Entered By SH  
(206) 753-5000

September 11, 1985

Mr. Leonard D. Madsen, Planning Director  
Island County Planning Department  
Post Office Box 698  
Coupeville, Washington 98239

RECEIVED  
SEP 17 1985  
PLANNING - DEPT.

RE: Hasting's Fill for Howell's  
Waterfront Tracts in Holmes Harbor  
N $\frac{1}{2}$ , Section 22, Township 30 N.,  
Range 3 E.

Dear Mr. Madsen:

Our staff has had an opportunity to visit Howell's Waterfront Tract. Our comments follow.

Much of the site is a salt marsh and, thus, is a wetland. It appears the wetland comprises much of the vegetated areas in tracts 23 and 24. In tract 24, all the vegetated areas below the toe of the bank are wetlands. In tract 23, a line running from the third cabin to the toe of the bank parallel to the road appears to identify the wetland boundary. Should the Corps of Engineers identify the unidentified grass as a wetland indicator species, the wetland area would be even larger.

In spite of the dry year, the soils were saturated during our visit. It appears that salt water percolates through gravel at high tides and maintains the wetland vegetation found on site.

Wetland indicator plants found in the area include:

- 1) pickleweed (Salicornia virginica), which requires high salinity and is found in lower (wetter) intertidal range;
- 2) saltgrass (Distichlis spicata), which also requires high salinity and is found from the low to high intertidal range;
- 3) saltbush (Atriplex patula var. hastata), which requires high salinity and is found in low intertidal range;
- 4) seaside arrowgrass (Triglochin maritimum), which grows in a wide range of intertidal areas.

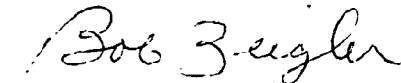
Mr. Leonard Madsen  
September 11, 1985  
Page Two

It appears any fill planned to be placed in the wetland areas would require a section 404 permit from the Corps of Engineers.

We hope you find our comments helpful. If you have any questions, call us at 753-3318.

Sincerely,

THE DEPARTMENT OF GAME



Bob Zeigler, Applied Ecologist  
Environmental Affairs Program  
Habitat Management Division

BZ:cv  
Enclosures  
cc: Agencies  
Region

27 September 1985

## MEMORANDUM FOR RECORD

SUBJECT: Wetland Determination for Section 404 Jurisdiction at Site Adjacent to Holmes Harbor, Saratoga Passage, Puget Sound near Freeland, Island County, Washington

1. Introduction. This report identifies the regulatory concerns of the Seattle District and determines the Corps of Engineers permit authority under Section 404 of the Clean Water Act for property owned by Richard and Lorraine Hastings of Edmonds, Washington. The report is based on a one-time site investigation and information from the U.S. Soil Conservation Service. The report is presented as an overview rather than a comprehensive evaluation.

2. Project Description. The project involves discharge of 2,000 cubic yards (cy) of fill material to stop flooding problems caused by winter waves and storms. The fill covers approximately 4/10 of an acre.

3. Project Location. The project site is at Dines Point near Freeland, Island County, Washington. The site is separated from Puget Sound by a wooden breakwater and a beach berm. The location is in the SW $\frac{1}{4}$ NW $\frac{1}{4}$  sec. 22, T. 30N., R. 2 E., (7.5 minute Quad Freeland, Washington).

4. Site Investigation. The site was investigated on 16 August 1985 by Messrs. Chris McAuliffe and Mike Bowlus (NPSOP-RF), accompanied by Ms. Ann Dold, Island County Planning Department.

5. Area Description. The area inspected is behind a beach berm and wooden bulkhead in Holmes Harbor, Saratoga Passage, Puget Sound at Dines Point. The area is roughly oval in shape and about 1.7 acres in size. Approximately 0.4 acre has been filled since May 1985. The site was traversed on foot with special attention given to the vegetative community, and general hydrology of the area. Soils information was gathered from the Soil Survey of Island County, Washington, by the Soil Conservation Service, 1958.

a. Vegetation. The inspection disclosed a fairly typical high salt-marsh community. Dominants along the fringe included pickleweed (Salicornia virginica), dodder (Cuscuta salina) (parasitic on pickleweed), and saltgrass

27 September 1985

SUBJECT: Wetland Determination for Section 404 Jurisdiction at Site Adjacent to Holmes Harbor, Saratoga Passage, Puget Sound near Freeland, Island County, Washington

(Distichlis spicata). Other species found were arrow grass (Triglochin maritima), and fat hen (Atriplex patula). Fat hen and saltgrass were interspersed in the middle of the wetland with the dominant, obligate, meadow barley (Hordeum brachyantherum) and patchy, facultative, quackgrass (Agropyron repens). The U.S. Fish and Wildlife Service classification of the wetland is estuarine, intertidal, emergent, persistent, irregularly flooded - diked.

b. Hydrology. Water from Puget Sound apparently seeps through the sand/gravel/cobble beach berm at high tides. This apparently supplies the needed water to retain the robustness of the dominant species.

c. Soils. No soils pits were dug. According to the Soil Survey, the soil appears to be the Lummi series. These are poorly drained, hydric soils. They formed in stratified marine and alluvium in lowland areas adjacent to estuaries and tidal salt marshes slightly above sea level. A seasonal high water table exists from .5 to 1.5 feet deep with ponding from October through June. Capability unit is III-W-1 meaning severe limitations due to wetness.

6. Jurisdictional Determination. In current Department of the Army regulations issued July 22, 1982, wetlands are defined as those areas that are inundated or saturated by surface or ground water at a frequency and duration to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas. As defined, wetlands do exist in the project area. These wetlands then, if adjacent to a water of the United States, would be within the jurisdiction of the Corps of Engineers under Section 404 of the Clean Water Act.

The term "adjacent" is defined in the regulations as meaning bordering, contiguous, or neighboring. Wetlands separated from other waters of the United States by manmade dikes or barriers, natural river berms, beach dunes, and the like are "adjacent wetlands." The wetlands identified above are adjacent to Holmes Harbor, Saratoga Passage, Puget Sound.

7. Conclusions. As defined in current regulations, the project site contains wetlands adjacent to waters of the United States and within the jurisdiction

NPSOP-RF

27 September 1985

SUBJECT: Wetland Determination for Section 404 Jurisdiction at Site Adjacent  
to Holmes Harbor, Saratoga Passage, Puget Sound near Freeland, Island  
County, Washington

of the Corps of Engineers under Section 404 of the Clean Water Act. The  
placement of dredged or fill material would have taken prior approval by the  
Department of the Army.

8 Oct 1985

Date

Chris Mc Auliffe

CHRIS MC AULIFFE  
Hydrologist  
Enforcement Section

9 Oct 85

Date

Michael L. Bowlus

MICHAEL L. BOWLUS  
Biologist  
Environmental and Processing Section

8 Oct 1985

Date

Samuel R. Casne

SAMUEL R. CASNE  
Environmental Analyst  
Regulatory Branch

Copy Furnished:

EPA, Regional 10  
EN-PL-ER/Weinmann

RA

"Exhibit B"

Dec. 6, 1985

Lane Powell Moss & Miller  
Attn: Michele Wugalter  
1900 Skyline Tower  
10900 N.E. Fourth Street  
Bellevue, WA 98004

Re: Response to concerns of wetland conditions  
Hasting's Dines Point Property

Dear Ms. Wugalter:

Enclosed are the responses to the concerns that have been raised regarding the conditions of the wetlands on the Hasting's Dine Point Property.

I have tried to discuss briefly the points that were raised in our discussions with the Hastings, and also some of the points raised in the various agency reports. If you have any questions about the reponses, please give me a call and we can try to clarify the questions you might have.

If there is anything else that we need to do on the prject, please give me a call.

Sincerely,



Dr. Kenneth J. Raedeke  
Research Associate Professor  
University of Washington  
Certified Senior Ecologist, ESA

Enclosures



The following comments are made in response to specific concerns raised in discussion of the status and conditions on the Hastings Dines Point Property in Island County. The objective of the report is to more fully discuss and evaluate the impacts of the proposed fill and development on the natural resources present on the property, and surrounding properties, in response to the specific points raised by the applicant.

A site visit was conducted on June 5, 1985 by Dr. Kenneth J. Raedeke and Ms. Dorothy A. Milligan, accompanied by Ms. L. Hastings. The purpose of the visit was to survey the wetland identified by Island County Staff, investigate the wetland classification, and assess surface hydrologic conditions extant on site.

The evaluation of potential impacts will be based on the issues raised in the County Staff report, and agency reports, and site conditions observed during the brief field survey. Specific issues to be addressed are (1) potential impacts on wetland functions, (2) potential impacts on drainage patterns, (3) potential impacts to navigation and currents, and (4) status of the wetland without the project.

#### (1). POTENTIAL IMPACTS ON WETLAND FUNCTIONS

Wetlands are reported to provide a wide range of valuable functions, principally including:

- o habitat areas
- o ground water recharge
- o flood control
- o sediment, erosion, and pollution control
- o recreational areas

#### Impacts to habitat function

The wetland on the Hastings property was identified by County, State, and Federal agencies after the placement of the fill. No wetland habitat, which is a type of "protected" habitat by County, State, and Federal regulations, had been mapped for the site before the filling commenced.

The Coastal Zone Atlas of Washington (Washington Department of Ecology 1979) mapped the area in question as an upland beach grassland (designation 312), and not as a wetland. The CZA did not note any special habitat features for the site.

The wetland area does provide wildlife habitat, as do all vegetated areas. However, not all vegetation communities, or wetlands provide equal quality wildlife habitat. The

Coastal Zone Atlas of Washington (Washington State Department of Ecology 1979) does not note any special wildlife habitat areas for the Dines Point terrestrial areas (i.e., all areas above the inter-tidal zone). The only note is for seabirds in the marine habitats in the surrounding open saltwater area.

The wetland present on the Hastings property currently provides marginal wildlife habitat. The value has been reduced for a number of reasons. First, the wetland area is very small by all standards, and isolated. Second, the wetland is located in close association with residential development both on the site, and on adjacent lands to the west. Constant disturbance by humans would prevent most species from using the area, except those common in urban or residential areas. Third, there is no longer any direct connection with the tidal zone, thus eliminating nutrient exchange, influx of inter-tidal invertebrates, etc. Productivity of this salt marsh would be much lower than for a salt marsh with direct connection to the inter-tidal areas.

As a result, few wildlife species are expected to be found in this habitat. Likely species that would be found are songbirds, and small mammals. Few if any marine vertebrates, or species associated with marine systems are likely to use the habitat, due to the lack of direct connection with saltwater, and associated lack of marine resources such as marine organisms for food source of vertebrates.

There are no known federally threatened or endangered plant or animal species on the site, or in the immediate vicinity. There are also no known State sensitive plant or animal species on the site or in the immediate vicinity.

A list of species observed in the lower portion of the site is attached. Several species were unidentified since they were past the flowering stage.

There is no permanent water surface on the site under current conditions, hence there would be no reduction in water surface area. The fill would reduce the surface area of the seasonal water surface that collects after periods of rain.

#### Impacts on ground water recharge function

Ground water recharge in salt marshes is not considered to be an important, or desirable function of the wetland. Ground water recharge is an important function of fresh water marshes, especially where ground water is pumped from

wells for domestic use. Groundwater recharge is not generally an important or even desirable function of saltwater marshes.

Salt water infiltration (that is recharge in this context) into the ground water is often a problem on islands, where potable ground water may be limited. Such a problem already exists in the San Juan Islands.

#### Impacts on flood control function

The site is included within the 100-year flood zone of FEMA. It is so designated because infrequent high tides during storm periods may flood the site. Under such conditions, the depression behind the bulkhead and spit would provide no protection from flooding. Wetlands function to prevent flooding downstream through detention (i.e., short-term storage) of stormwater runoff, and not from flood characteristics noted for the site. The wetland provides no significant flood protection, since flooding on site is due to high tides in storm conditions.

#### Impacts on sediment, erosion, and pollution control function

Wetlands also function as bio-filters that remove pollutants, sediment, etc. from stormwater runoff. Again, in this case this would not be an important function, since there is no identified source of such contaminants, and runoff into the wetland is limited to that entering from the vegetated upland forest portions of the site.

#### Impacts on recreational function

The existing recreational functions of the wetland are very limited. There are few features of the wetland that lend themselves to recreational use. Impacts would therefore be equally minor.

(2). POTENTIAL IMPACTS ON DRAINAGE PATTERNS

The natural drainage patterns on the Hastings' Dines Point property have been substantially altered by residential development to the west. This development eliminated the natural connection between the wetland and tidal areas. The natural lagoon that would have connected the remnant patch of salt marsh on the Hastings' property with the bay has been filled for residential development.

A pipe connection formerly existed between the bay and the wetland. This pipe was part of the former drainage system of the cabins. However, this pipe has been plugged within the last year. There is now no direct connection between the bay and the wetland. Principal drainage into the wetland is now freshwater runoff from the adjoining uplands to the south.

At the time of our field survey, there were limited patches of standing water to 2 inches in depth. The salinity of the water was not measured, however, it was brackish in taste.

Several agencies reports have speculated about saltwater seepage into the wetland area from the bay during high tides. This has not been substantiated. Such seepage of saltwater through the spit during high tides is not likely to be substantial, due to limited periods of possible seepage (i.e., only for short periods of time at very high tide periods), and the width of the spit that would need be traversed. The "robustness" of the salt marsh species noted can not itself demonstrate a saltwater connection, since these species could persist for some time in the brackish conditions present.

Filling in of a portion of the site would undoubtedly alter the existing drainage patterns. However, the type of impact will depend on final site design. Drainage patterns could be improved, maintained, or negatively impacted, depending on the final drainage plan objectives and implementation.

(3). POTENTIAL IMPACTS TO NAVIGATION

The wetland in question has long been isolated by residential development to the west. It is entirely self-contained, and has no direct connection to any water course, wetland, or salt water system. Any impacts of the fill would be limited to the site.

The fill and associated development would be entirely contained behind the existing spit and bulkhead, and so would not have any impact on existing watercourses, currents, and navigation in the area.

(4). STATUS OF THE WETLAND WITHOUT THE PROJECT

The ultimate status of the wetland is questionable, even if the fill were removed, and the area covered by the fill restored. The direct connection of the remnant wetland has been eliminated by residential development to the west and by the recent plugging of the defunct sewerline. Without direct connection to the salt water the salt marsh characteristic of the wetland may decrease over time. Long-term survival of the salt marsh species requires periodic, and for some species frequent inundation by saltwater. The entire wetland could eventually be lost entirely.

SUMMARY

With proper design, a single family house could be constructed, in addition to the existing fishing cabins, with minor impact to the natural resources of the site. The potential impacts associated with additional development could be mitigated to a large degree through habitat improvements that could be designed to increase the quality of the remaining habitat in the saltwater marsh.

There should be no impacts to off-site features, navigation, currents, etc. There would be no increase in flooding frequency, duration, or magnitude. The fill and development would impact only the resources on-site.

RAEDEKE ASSOCIATES  
Hastings - Dines Point Property

6

List of Plant Species Observed, June 5, 1985

Common Name	Scientific Name
Barley	Hordeum spp.
Goosefoot	Chenopodium murale
Gumweed	Grindelia integrifolia
Kentucky bluegrass	Poa pratensis
Mustard	Cruciferae (family)
Plantain	Plantago spp.
Pickelweed	Salicornia virginica
Rumex (Dock)	Rumex spp.
Seaside arrow grass	Triglochin maritima
Thistle	Cirsium spp.
Vetch	Vicia spp.
Tansy	Tanacetum douglasii
Salt grass	Distichlis spicata
Dodder	Cuscuta salina
Quackgrass	Agropyron repens
Fat hen	Atriplex patula

SHAPIRO &  
ASSOCIATES<sup>PC</sup>

December 18, 1985

The Smith Tower  
Suite 1812  
506 Second Avenue

Seattle  
Washington 98104

206/624-9190

Ms. Ann Dole  
Island County Planning Department  
Coupeville, WA

Dear Ann:

In response to your request, I visited the Dines Point site on December 16, 1985. As you explained, the concern at this site relates to a recent fill which was placed south and east of the cabins located on the beach front.

As I understand it, there are several questions which have been raised concerning this fill. Based on my observations, I would like to offer the following description of site conditions and history.

The Dines Point site is an emergent marsh wetland about one acre in size. In the northeast portion of the site, the wetland is dominated by pickleweed (Salicornia virginica) and saltgrass (Distichlis spicata); patches of gumweed (Grindelia integrifolia) and saltweed (Atriplex patula) are also present. The southern portion of the area is a mixture of grasses and forbs, dominated by bentgrass (Agrostis alba) and meadow barley (Hordeum crispus); willow herb (Epilobium watsonii), and thistle (Cirsium spp.) are also present. The base of the slope on the south edge of the wetland is dominated by a dense stand of salmonberry (Rubus spectabilis).

This assemblage of communities suggests several different factors are influencing the physical and biological conditions in the area. The presence of a salt marsh community (pickleweed, saltgrass, and gumweed) suggests sufficient saline influence to exclude brackish or freshwater species. The brackish marsh and fresh swamp are indicative of freshwater influence from the hillside to the south. Sloughing and disturbed trees further indicate a seepage condition in this area.

Saline influence could come from salt spray and washover or from tidal groundwater intrusion; it might also be a relict of the historic site condition. The distribution of salt marsh community in the wetland suggests that salt spray is not a dominant factor. The pickleweed/saltgrass community extends westward and southward away from the road to the east and the beach to the south. Similarly, the brackish community is found adjacent to the road. If washover and salt spray from prevailing southerly winter storms dominated the system, the saline marsh communities would be closest to the easterly beach, and the brackish marsh communities further away.

It does seem reasonable to assume the wetland is a relict of a predevelopment conditions. It appears that the northern beach is a recurved spit extending eastward from the base of the bluffs to the west and curving

Ms. Ann Dole  
December 18, 1985  
Page Two

southward at the Point. This type of spit formation is common around Puget Sound, and wetland habitats are often located behind them. Although there is often a tidal inlet in these situations, that is not always the case. In "closed point" situations, tidal groundwater intrusion is a common source of salinity and saturation. It is difficult to determine whether an inlet existed before construction of the road along the east side in the 1930s. It does seem reasonable to assume, however, that tidal groundwater intrusion has continued to occur through the 20-30 feet of sand which separates the wetland from Holmes Harbor. Such a condition has been noted in other areas around Puget Sound (NEC, 1975; Boule' and Shea, 1978).

With regard to habitat value, it would appear that this wetland does not support a large population of wildlife, especially in light of the limited tidal intrusion and nearby residential development (with associated dogs and cats). It might be possible to increase its overall habitat value, however, by improving the tidal connection through a culvert under the roadway. Such a culvert would allow regular tidal inundation and allow use of the area by juvenile fish and wading birds. Provision would need to be made to protect yard areas in the westernmost portion of the site, however.

In summary, there is a non-tidal wetland of about one acre located behind the berm at Dines Point. The wetland contains saline and brackish marsh, and fresh swamp communities. The saline marsh is probably maintained by tidal groundwater intrusion, while the brackish marsh and fresh swamp are influenced by freshwater seepage from the hill to the south. This type of recurved spit with associated wetland is common around Puget Sound and reflects the transport of sediment eroded from nearby feeder bluffs to the south and west. Due to the present lack of a tidal connection and the nearby residential neighborhood, the wildlife values of this wetland are limited. If a culvert were introduced under the roadway, however, those values would probably be substantially increased.

I hope this discussion assists you in your project. If I can provide any further information, please do not hesitate to call.

Sincerely,

SHAPIRO AND ASSOCIATES, INC.



Marc E. Boule', Vice President  
Biological/Physical Resources

MEB:ble



#### REFERENCES

Boule', M.E. and G.B. Shea, 1978. Delineation of Wetland Boundaries; Vol. IV in: Snohomish Estuary Wetland Study, 1979. U.S. Army Corps of Engineers, Seattle District.

Northwest Environmental Consultants, 1975. The Tidal Marshes of Jefferson County, Washington, Jefferson County Planning Department.

WETLAND EVALUATION: IS 12-5 (Lake Hancock)

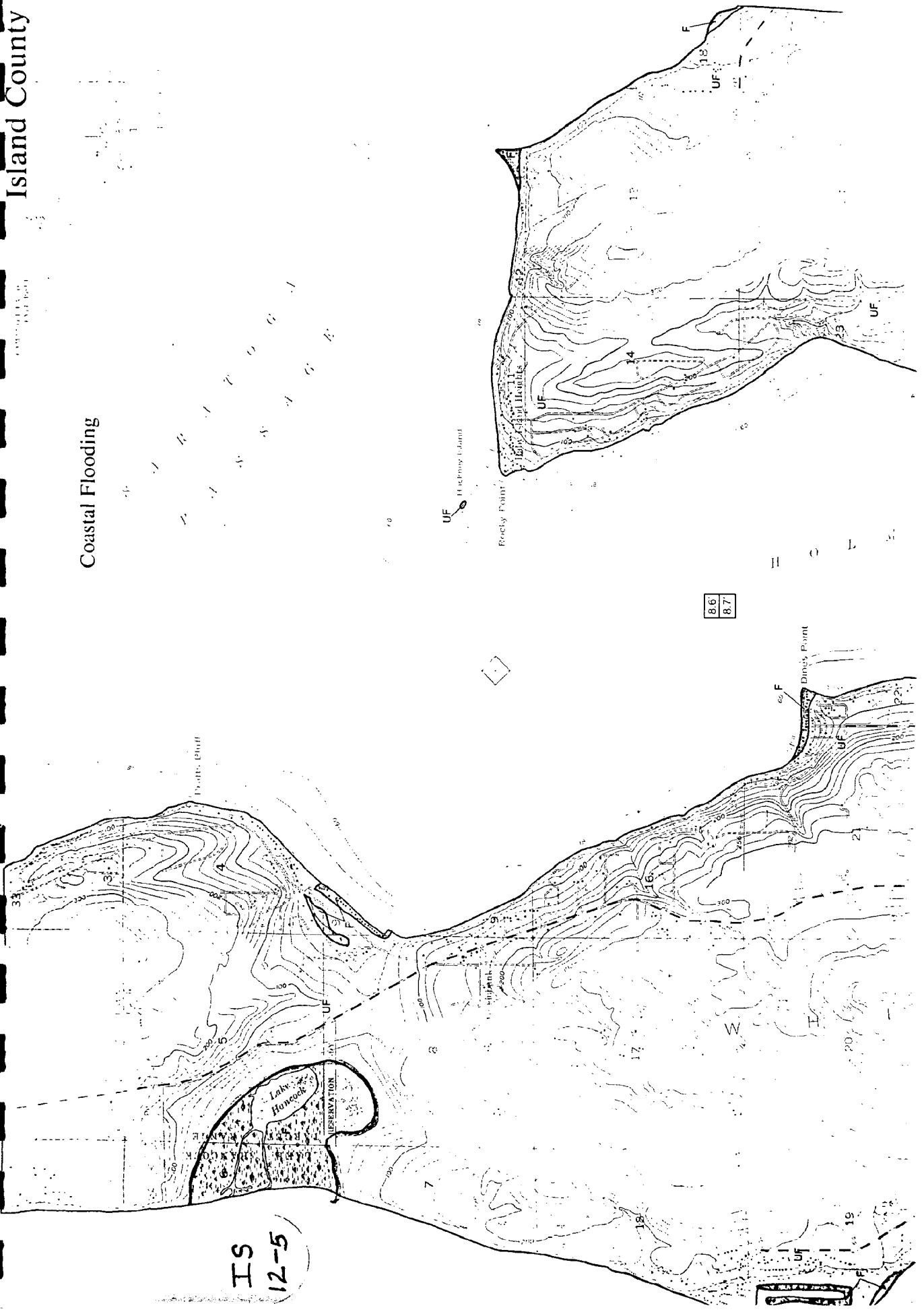
LOCATION: SECTION 5, TOWNSHIP 30N, RANGE 2E.

CZM ATLAS MAP #: IS 12

WETLAND CHARACTERISTICS AND VALUES: See Attachments.

1. Lake Hancock, Puget Trough Coastal Wetlands, Prepared by Linda Kunze for the Washington Natural Heritage Program of the Department of Natural Resources, January, 1984.
2. Site 13: Lake Hancock Area, Whidbey Island Habitat Study, prepared by the Soil Conservation District and the Washington Department of Game, 1979.

Coastal Flooding



5-16-85

NA

IS CO

01-009-219



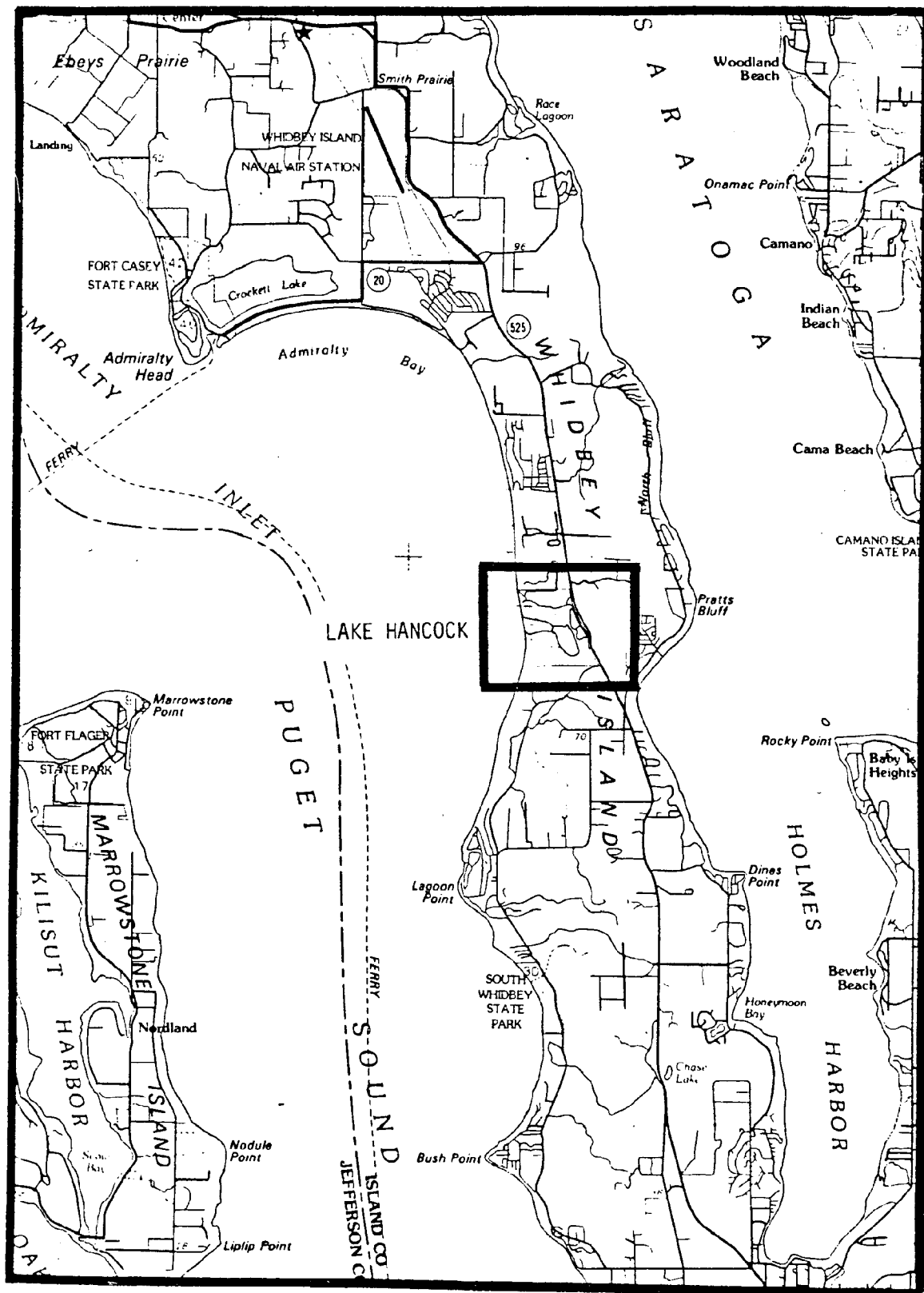


Figure 19. LAKE HANCOCK LOCATIONAL MAP

## LAKE HANCOCK

### LOCATION:

Island County; T30N, R2E, portions of sections 5, 6, 7 and 8. This site is located south of Admiralty Bay on the west side of Whidbey Island (Fig. 19).

### SIGNIFICANCE:

Lake Hancock is an exceptionally large and diverse coastal lagoon system.

### GENERAL DESCRIPTION:

Figure 20 illustrates the distribution of features at Lake Hancock. The features are:

1. a lagoon pond;
2. a sandy, high salinity, low intertidal marsh;
3. a sandy, high intertidal marsh;
4. a transition zone marsh; and
5. a freshwater wetland.

The area of interest is approximately 207 acres. Marine influence is restricted by the deposition of sands and gravels that form a berm across the bay mouth. A channel through the berm allows for marine influence. Substrates appear to be silty-sands throughout. Salinities range from freshwater to hyperhaline. There is considerable driftwood accumulation along the north and northeast wetland margin.

### FEATURES:

#### I. Lagoon Pond

The lagoon pond is a shallow, permanent pond of approximately 37 acres. It is currently connected with marine waters of Puget Sound by a single channel. However, the berm topography indicates variability in channel location and numbers.

#### II. Sandy, High Salinity, Low Intertidal Marsh

This is the predominant marsh type at Lake Hancock. The lagoon system has little topographic relief and contains an extensive network of tidal channels which carry tidal waters throughout most of the marsh. Interstitial soil salinities in this area ranged from 27 to 46 ppt.

Salt pannes occur throughout this marsh type. The vegetation is a mosaic, primarily composed of a community codominated by Distichlis spicata and Salicornia virginica. Jaumea carnosa, Plantago maritima and Triglochin maritimum may be codominants with D. spicata and S. virginica. In slightly lower areas, particularly around salt pannes and tidal channels, pure stands of Salicornia virginica occur.

Distichlis spicata-Salicornia virginica community (mapping symbol 1)

Dominant Species

Distichlis spicata (saltgrass)  
Salicornia virginica (pickleweed)

Subdominant Species

Jaumea carnosa (jaumea) (locally codominant)  
Triglochin maritimum (seaside plantain) (locally codominant)

Minor Species

Atriplex patula var. hastata (saltbush)  
Plantago maritima (seaside plantain) (locally codominant)  
Puccinellia cf cusickii (Cusick's alkaligrass)  
Puccinellia cf pumila (dwarf alkaligrass)  
Spergularia canadensis (winged sandspurry)

III. Sandy, High Intertidal Marsh

Along the south side of the lagoon system, the vegetation grades gradually from low intertidal marsh to a high intertidal marsh and transition zone wetland before shifting to purely upland vegetation. The sandy, high intertidal marsh has a wide range of salinities, ranging from polyhaline to brackish. The lowest elevation community is codominated by Agrostis alba and Distichlis spicata. Agrostis alba is a non-native species indicative of past disturbance. This community may be considered transitional between low and high intertidal marsh. The highest elevational community of the marsh type is codominated by Juncus balticus and Potentilla pacifica.

Agrostis alba-Distichlis spicata community (mapping symbol 2)

Dominant Species

Agrostis alba (redtop) (non-native)  
Distichlis spicata (saltgrass)

Minor Species

Atriplex patula var. hastata (saltbush)  
Potentilla pacifica (Pacific silverweed)  
Triglochin maritimum (seaside arrowgrass)  
Spergularia canadensis (winged sandspurry)

Juncus balticus-Potentilla pacifica community (mapping symbol 3)

Dominant Species

Juncus balticus (Baltic rush)  
Potentilla pacifica (Pacific silverweed)

Minor Species

Agrostis alba (redtop) (non-native) (locally subdominant)  
Scirpus validus (softstem bulrush)  
Typha latifolia (cattail)

IV. Transition Zone Marsh

A transition zone marsh occurs in the southeast portion of the lagoon system. While salinity measurements were not taken, plant species composition and the occurrence of driftwood indicate occasional marine influence. The community is codominated by Typha latifolia and Potentilla pacifica. The soil surface is composed of black, slightly anoxic organic matter.

Typha latifolia-Potentilla pacifica community (mapping symbol 4)

Dominant Species

Potentilla pacifica (Pacific silverweed)  
Typha latifolia (cattail)

Minor Species

Atriplex patula var. hastata (saltbush)  
Polypogon monspeliensis (rabbitfoot polypogon)  
Rumex occidentalis (western dock)  
Scirpus validus (softstem bulrush) (locally dominant)



## V. Freshwater Wetland

In one area, high intertidal and transition zone marshes grade into a freshwater wetland. The species composition suggests that marine influence is minor. The wetland shifts from an outer shrub margin dominated by Myrica californica to a community codominated by Alnus rubra, Myrica californica and Carex obnupta.

### Myrica californica community (mapping symbol 5)

#### Dominant Species

Myrica californica (Pacific wax-myrtle)

#### Minor Species

Typha latifolia (cattail) (locally subdominant)

### Alnus rubra/Myrica californica/Carex obnupta community (mapping symbol 6)

#### Dominant Species

Alnus rubra (red alder)

Carex obnupta (slough sedge)

Myrica californica (Pacific wax-myrtle)

#### Subdominant

Gaultheria shallon (salal)

Ledum groenlandicum (bog laurel)

#### Minor Species

Galium sp. (bedstraw)

Lonicera involucrata (black twinberry)

Lysichitum americanum (skunk cabbage)

Oenanthe sarmentosa (water parsley)

Picea sitchensis (Sitka spruce)

Pinus contorta (lodgepole pine)

Potentilla pacifica (Pacific silverweed)

Pteridium aquilinum (bracken fern)

Rosa nutkana (Nootka rose)

Rubus spectabilis (salmonberry)

Rubus ursinus (Pacific blackberry)

Spiraea douglasii (spirea)

Typha latifolia (cattail)

#### LAND USE HISTORY:

The Lake Hancock site is owned by the U.S. Navy. For many years the area has been used as a target range. During World War II, live ammunition was used. The marsh surface has been altered by this use. The large number of salt pannes may be due to impact and explosion of munitions. Some channels in the marsh are artificially straight. A small building and fence are located on the low intertidal marsh. The upland has been logged. Roads have been graded along the south, east and north upland margins of the lagoon system. Alnus rubra is invading portions of this upland region.

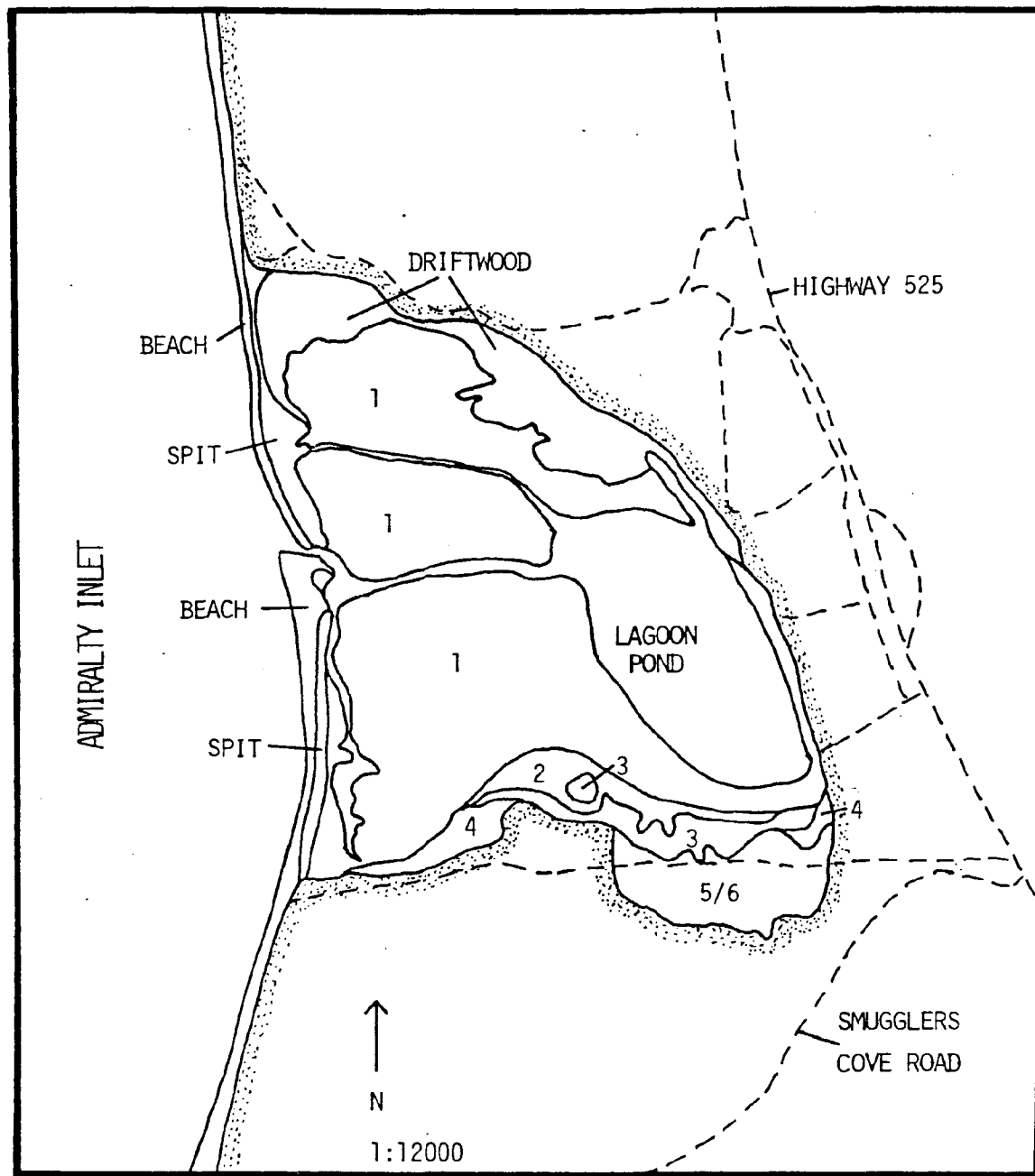


Figure 20. LAKE HANCOCK FEATURES MAP

SITE 13: LAKE HANCOCK AREA

APPROX. ACREAGE: 165

HABITAT: Nearly every habitat type available on Whidbey Island is represented here: salt water shore line, tidal flats, marsh, grasslands, second growth forest lands, and even a small stand of old timber.

VALUE: CRITICAL. This is one of the most varied and extensive wildlife habitat sites still left on Whidbey. On top of that, it is a "bonanza" for the eye, offering breathtaking vistas that include even Port Townsend and the Olympic Mountains. This is one of the few Island sites capable of carrying good number of wildlife year round. It's tidal floodlands serve as a rich "nursery" for everything from clams to cutthroat trout and waterfowl. It is an extremely rich bird area. It offers all the essentials of a good habitat area, ample year-round supplies of : water, food, shelter, plus adequate freedom from harrassment and human interference. Should this site ever be developed, nothing would compensate for the richness of life forms that would be lost here.

SPECIAL PROBLEMS: This site used to be a Navy bombing range. Since this use was ended years ago, the Navy is presently carrying an extensive piece of property here which it does not utilize. So in this time of concern for "cost efficiency", they may at some time put this area "up for grabs". Should this occur, and should it result in this site being developed, the carrying capacity for Central Whidbey wildlife (especially those that depend on an estuarian or marsh type environment) would be drastically reduced.

ACCESSIBILITY: Highway 525 (the main North/South road on the Island) directly borders the entire length of the property. Foot access from here is easy. The site can also be reached off Smuggler's Cove Rd., or by boat from the salt water. Site readily accessible to anyone who takes the time.

USE: Public use, given the size of the area, is relatively light. But it is utilized by picnickers, beachcombers, duck hunters, deer hunters, trappers persuing fox and raccoon, and rabbit hunters. It also offers good crabbing and clamming (for those who know the area), and some excellent fishing for perch, flounder, cod, and cutthroat trout in the channel. The area is an important study and collecting site for botanists and ornithologists.

SITE #13: HANCOCK LAKE, cont.PARTIAL LISTING OF LIFE FORMS UTILIZING SITEWATERFOWL:

Virtually every duck and goose found on (or traveling through) the Island, has been seen here. For the full listing, consult the listing BIRDLIFE OF WHIDBEY ISLAND, found at the very beginning of the report.

OTHER BIRD LIFE NOTED:

Again, virtually every species of bird frequenting Whidbey Island, utilizes this site sometime during the year. For full listing, consult BIRDLIFE OF WHIDBEY ISLAND at the beginning of the report.

It should be noted that the Lake Hancock site is heavily used by bald eagles for a hunting and roosting site. It is also a feeding ground for large numbers of blue herons. Up to 23 great blues were seen feeding on one low tide. Great numbers of hawks and owls also work the area.

OTHER WILDLIFE SEEN ON SITE:

Blacktail Deer	Raccoon
Red Fox	Weasel
Coyote	Striped Skunk
Douglas Squirrel	Muskrat
Cottontail Rabbit	Garter Snake
Deer Mice	River Otter
Mink	Norway Rat
Red-legged frog	Cutthroat Trout
Butter Clams	Dungeness Crabs
Sea Perch	Flounder
Black Benny	Bullheads
Lingcod	Shrews (a variety)
Bats (a variety)	

SITE #13: HANCOCK LAKE, cont.TYPICAL FLORA:Trees:

Douglas Fir  
Hemlock  
Alder  
Madrona

Shrubs:

Rhododendron  
Salal  
Red Huckleberry  
Evergreen Huckleberry  
Mahonia  
Twin Flower  
Oceanspray  
Red Elderberry  
Willow (Salix sp?)  
Nootka Rose  
Salmonberry  
Blackcaps

Wildflowers:

Pterospera andromeda (PROTECTED SPECIES)  
Tansy Ragwort (an introduced poisonous species)  
Pearly Everlasting  
Canadian Thistle  
Cinquefoil  
Self-heal  
Honeysuckle  
Vetch  
Indian Paint Brush  
Yarrow  
Foxglove

INTERESTING FIELD NOTES:

"What a treasure house for those of us who love wildflowers. . ."  
(Noted Island botanist, Dorothy Leckenby)

.....  
"Once, with scuba gear, I dove down into some of the deeper holes in Hancock Lake, in the channel where it feeds into the sound, and was out-and-out amazed at the size of the lingcod I found lying there. . ."  
(Ron Edwards, Isl. Co. Sheriff's Dept.)

.....  
"I was watching a duck hunter shooting out of a blind he had improvised on the edge of Hancock Lake. I saw him shoot at a scaup. He hit it, and it fell into the lake. When he went to retrieve it, it dove, and he lost it. Though he searched for quite a number of minutes, he never found it. However, from my vantage point high above him, I just happened to see where the duck surfaced again, quite a ways away. It was trashing around, alive, but unable to fly. Suddenly, I saw a mature bald eagle, who was perched on a distant snag, watching the action much as I, leave his perch, and swoop down and dispatch the short-lucked duck. He carried it back to his perch tree, where he made short work of it. Intrigued, I started checking the ground below the eagle perch trees I found in other areas on the Island. I found that during the duck hunting season, all sites were heavily littered with duck bones and parts. This was not the case to the same degree after the duck season had ended, even though a great many ducks were still around. So it was obvious that the eagles had become accustomed to picking up ducks crippled by hunters. During other times of year, though they still ate an occasional duck, fish & rodent parts made up most of the litter and pellet contents below their nests and feeding trees. . ." (field notes of Wildlife Agent de la Torre)

WETLAND EVALUATION #IS 18-1 (POSSESSION BEACH)

LOCATION: NORTHEAST QUARTER OF SECTION 14, TOWNSHIP 28  
NORTH, RANGE 3 EAST, W.M.

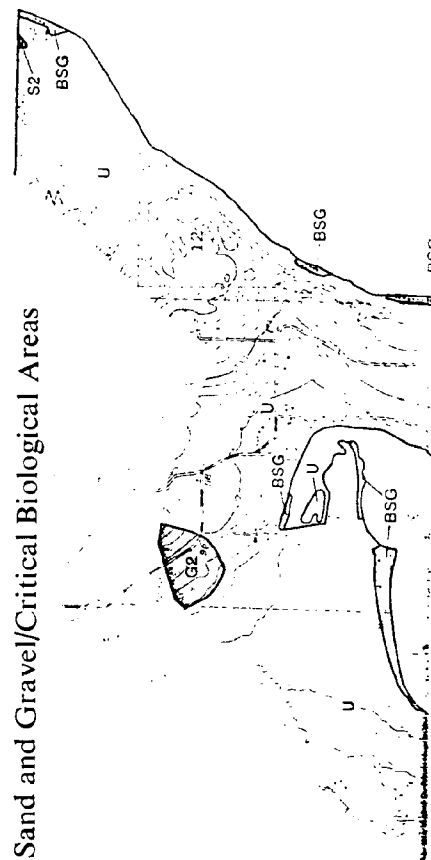
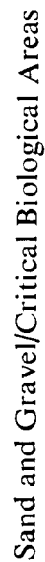
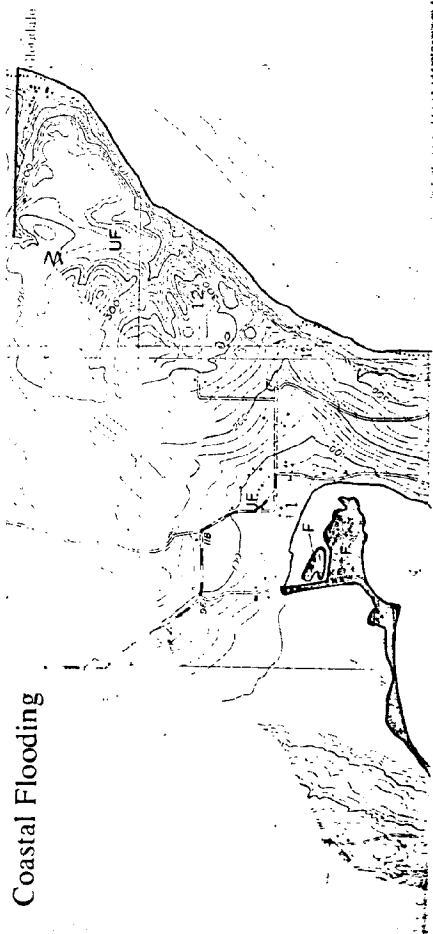
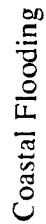
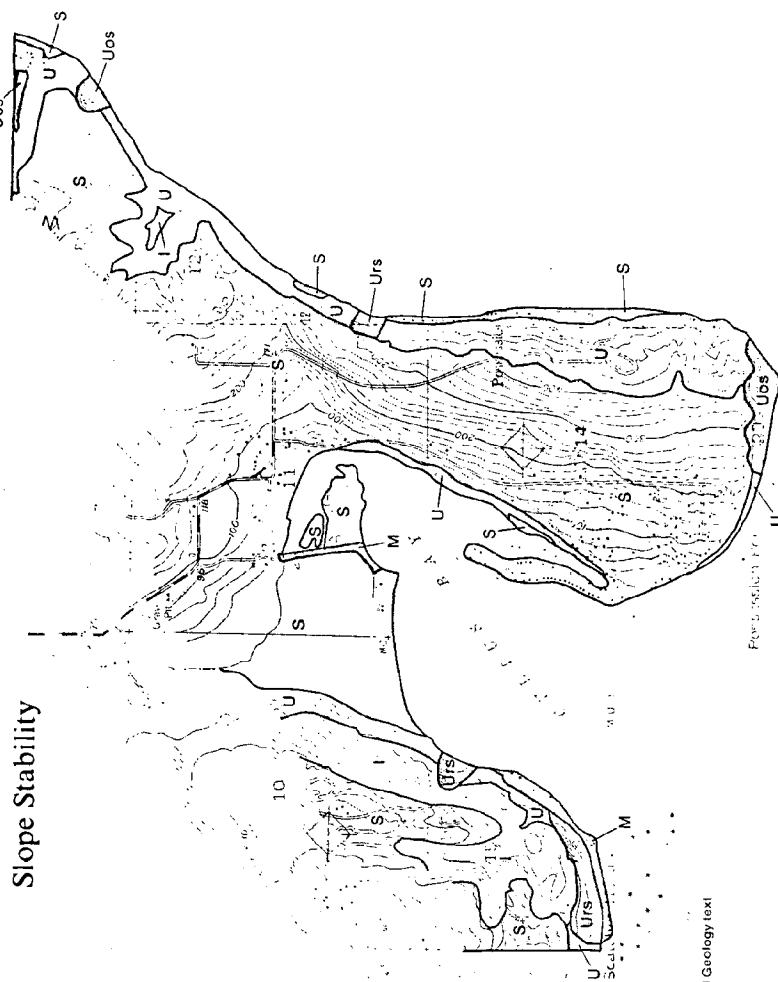
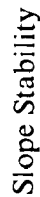
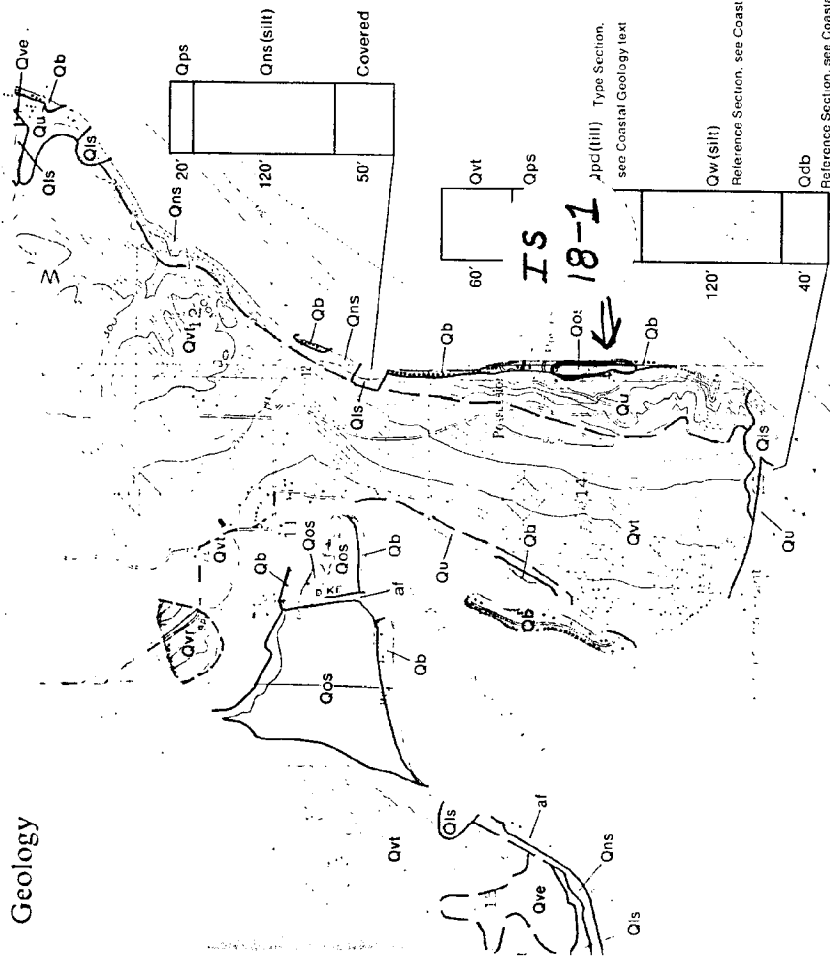
CZM MAP #: IS 18

WETLAND CHARACTERISTICS: This area is known as Possession Beach. It is characterized by a barrier beach, accreted by southerly wave action, eroding the Possession Point feeder bluff to the South. An alternately flushed, fresh-water and saltwater tidal lagoon is impounded behind the berm. It drains Northward and outlets near the end of Franklin Road.

The marsh grades from freshwater vegetation in the South, to salt tolerate species in the North. Typical plant communities include, Atriplex patula (Fat Hen), Distichlis spicata (salt grass), Triglochin maritimum (Arrow grass), Potentilla pacifica (Silver weed), Oenanthe sarmentosa (Water Parsley) and Ranunculus repens. The North end of the marsh is clogged with logs, apparently carried over the berm during extreme storm events. A tidal channel meanders through the marsh, draining to the North.

WETLAND VALUES: Attachments labeled Appendix B and Appendix D were prepared for the Environmental Impact Statement which addressed the development of a waterfront park involving the South end of this marsh. Both document the values of this marsh, in terms of its uniqueness, its wildlife habitat and its capacity to absorb upland runoff, provide water quality enhancement and store storm waters in the event of sudden and prolonged rainfall. Appendix B which was prepared by Wolfe Bauer, states that this type of beach form represents only 3% of the total Puget Sound beach types. He further emphasizes the sensitivity of such systems and urges careful management.





5-16-85

NA IS CO

04-818-27



# Appendix B

Biological Evaluation

(Preliminary Report)

Possession Beach Waterfront Park

for

Port District of South Whidby Island

by

Independent Ecological Services  
1514 Muirhead Avenue  
Olympia, WA 98502

## Existing Conditions

### Physical Description

#### General

Possession Beach Park is a proposed boat launch and picnic area with a caretaker's residence and parking. There will be foot trails in the upland portions of the park and a boat ramp access road running from Franklin Road to the beach. The park is located on Whidby Island at Possession Beach between Franklin Road and Possession Road. It consists of a steep bluff along the westside sloping down to Puget Sound. From the toe of the slope, east, there is a back dune salt marsh, a pebble-sand mature dune and a pebble-rock beach in the sequence.

#### Beach - Wetland Vegetation

The beach - dune - wetland run north-south along the toe of the bluff. The wetland (marsh) is situated behind the dune. Historically it was connected to Puget Sound at the north end in the proximity of what is now Possession Road. It has been isolated from Puget Sound except at extreme high tides by roads coming off the bluff to cabins located on the dune. Three roads have created three smaller semi-isolated wetlands. The southern most section of wetland is smaller and narrower than those sections further north. (Photo 1) The center wetland has a narrow remnant of a channel running south to north. (Photo 2) These two sections of wetland are within the park boundaries. The northern section of wetland extends to Possession Road. Those wetlands in the park have a heavy stand of wild rose and blackberry at the toe of the

bluff. This creates a natural buffer between the hill or bluff ecosystems and the beach system. The dominant plant species throughout the wetland is Atriplex patula (arache). The other common species are saltgrass (Distichlis spicata) in the lowest part of the wetland next to the small channel, arrow grass (Triglochin maritimum) scattered in small bunches and silverweed (Patentilla pacifica) which is more prenalent at the south end of the wetland but is present throughout. Water parsley (Oenanthe sarmentosa), buttercup (Ranunculus repens), and dock (Rumex maritimus) were scattered in the higher portions of the wetland.

The permanent mature dune is vegetated with European beachgrass (Ammophila arenaria) and a mix of other species. Beach grass extends down over the back dune to the edge of the saltmarsh and across the dune to the edge of the pebble beach. Other dune grass species present are dune grass (Elymus mallis) and tufted hairgrass (Deschampsia cespitosa). Dune grass is uncommon and scattered while hairgrass is common on the back dune, particularly in areas where driving has impacted the beach grass. A variety of other species are scattered through the beach grass. Most common are plaintain (Plantago maritima), vetch (Vicia spp.) and thistle (Cirsium arevense). Two fall daisy's, Dougla's Aster (Aster douglasii) and gum plant (Grindelia oregana) add color to the beach. Eight to 10 stunted Douglas fir (Pseudosoga menziesii) are growing along the crown of the dune. None are large but they are established and should continue

to survive unless there is damage their roots or they are unstabilized allowing the wind to uproot them.

The pebble-gravel beach is unvegetated at tide levels between +12 and +4 to +6. At about +6 sea lettuce (Ulva spp.) starts appearing attached to larger rocks. It continues down into the eelgrass bed (Zostera marina). Eelgrass grows from approximately 0 to -6 MLLW across the front of the park. The density varies but averages about 15 turions per/meter squared. Much of the area is sparse while others are clumped.

#### Bluff Vegetation

The steep bluff above the beach is densely forested except for the area cleared for the existing residence. Only tree species and relative abundance were determined. The higher bluff was forested with a mix of coniferous and deciduous trees. Douglas fir, western hemlock (Tsuga heterophylla), and western red cedar (Thuja plicata) are mixed with big leaf maple (Acer macrophyllum) and red alder (Alnus rubra) throughout with a few engelman spruce (Picea engelmannii) along the toe of the slope abutting the wetland.

#### Wildlife

Wildlife is limited on the beach and back marsh areas. Observations were limited to one 3 hour visit and reading of sign. The only observations were of birds. Activity was low because of the time of year, however, sign did not indicate large summer nesting populations.

### Birds:

Small passerine birds dominated both the bluff and the beach areas of the park. At the time of the site visit the most abundant birds were migrating American goldfish (Spinus tristus). They were feeding on thistle down and other seeds along the edge of the forested slope and the wetland. Most activity was in the blackberry - rose bramble. Other small birds using the site were the song sparrow (Melospiza melodia) and white - crowned sparrow (Zonotrichia leucophrys). Great blue heron (Ardea herodias) perch in the large trees and hunt the back marsh and beach. A sharp - shinned hawk (Accipiter striatus) was hunting the forested edge on October 11, 1984. A list of expected bird use is included as appendix 1.

Sign of three mammals were identified on the beach - wetland. They were deer (Odocoileus hemionus), raccoon (Procyon lotor) and vole (Microtis spp.) sign was in the back marsh and on the road leading across the marsh to the dune. Deer were feeding and bedding down in the drier portions of the marsh. Raccoons were working the small channel in the back marsh. Vole runs were found in the upper reaches of the marsh. The only mammal sighted in the woods was a chickaree (Tamiascirus douglasii). Surveyors were working in the area which effected wildlife observations. Sea mammals identified that are expected to use the offshore area are included with other expected mammals in Appendix 2.

Samples of beach sands were examined for benthic productivity. Levels of harpacticoids and amphipods were

extremely low. Since this was only a random non-quantified sample no numbers per meter were estimated. A further inspections of the pebble-rock starta was completed. No crabs, insects or insect larvae, or benthic macrophytes were found. Rocks below +2 supported barnacles (Balanus galindula).

#### Project Impacts

Impacts are limited to the effects of two alternatives to the back marsh, the dune, and the shallow water habitats. The two alternatives are (1) placing a bridge or improving the road at the existing road location and (2) placing a bridge or a new road to the north of the existing road.

##### Alternative 1:

Crossing the back marsh at the existing road site would have the less impacts to the back marsh than alternative 2. The major impacts already have occurred. Widening and raising the road would have minimal impacts to small areas of marsh on both sides of the existing road. Major losses would be a few feet of Atriplex on each side, some blackberry on the bluff side and a few clumps of dune grass on the beach side. A bridge would have no negative impacts on the marsh and could create an enhancement if the existing road was removed. The marsh could also be enhanced if a culvert was placed in the road.

##### Alternative 2:

Creating a new road across the back marsh would inundate a significant amount of viable saltmarsh. Because



of the configuration of the marsh the fill would have to be longer than the existing road. Also unless the hill side was cut the fill would have to be deeper on the bluff side of the marsh thus increasing the footprint width to accomodate the raodside slope. The existing road could be removed and revegetated to marsh but there would still be a net loss of wetlands as well as additional short term losses until the removed road area fully reverted to marsh.

A bridge would not impact the wetland but would require removal of bluff vegetation and dune grass. Also, depending on its location, it could effect the limited trees on the dune. If it were placed at the north end of the park the road leading to the bridge would require the removal of a number of large fir and big-leaf maple. It would also effect one of the perching areas used by great-blue heron. Either alternative would require the removal of dune grass and the creation of a turn around and approach road to the boat launching ramp. Impacts would be minimal at either site. The loss would create a cleared space which will allow waters that now breach the dune to flow faster and possibly deposit more debris than now occurs with the heavy stand of grass. This could increase the level of flooding in that portion of the back marsh. This is not a significant impact unless erosion of the dune should occur. Proper stabilization of the ramp approach would prevent this from occurring.

The ramp, depending on the style, will cover a portion of the beach. Because of the limited life forms in the

substrate, this in itself would have negligible impacts.

There is the possibility that littoral drift could be interrupted if the ramp is not correctly designed and constructed. This could create beach stabilization problems that could effect the limited organisms in the sand. The ramp will impact a small portion of the eelgrass bed below 0 MLLW. If a gridded ramps is used some eelgrass may reestablish itself between the concret slabs.

The establishment of picnic areas will remove dune grass. The impacts will depend on the amounts of grass removed. If pockets for individual areas are cleared leaving the bulk of the dune undisturbed, there will be little, if any, impacts. Removal or mowing of all of the grass would remove the natural filter and dam effects that the grass now serves. Under existing conditions, the grass slows water and collects out smaller particles when the tides exceed the elevation of the dune. This reduces the potential for back dune erosion and the filling of the salt marsh with sand or wood. Removal of the grass would reduce those effects.

#### Wildlife Impacts

Removal of larger trees for an approach road to alternative two could eleminate perching trees for herons, however, it will not reduce or otherwise negatively effect heron activity. Human activity may regualte heron feeding activity in the immediate park area.

Placement of a picnic grounds may attract gulls and raccoons but there would be no negative aspects of their

increased use. Other animal use should not be effected except for short periods when people use is heavy. At this time they will move back, then return when the camp ground is empty.

#### Mitigation - enhancement

Because the impacts to wetlands and the dune are so minimal there is no real need for mitigation. However, since it is a park, the wetlands could be enhanced through some small measures. These are:

1. Place large enough culverts in all roads crossing the marsh to allow ready movement of water from the south to the north end.
2. Create an artificial breach at the south end of the park or, if possible, at the south end of the wetland to allow saltwater to flow in and out of the back marsh at tides in excess of +6 to +8 MLLW. This would enhance the marsh and create an interesting area for park goers to observe and explore.
3. Direct all bluff run-off through the marsh. This would stimulate some diversity in the marsh, create a low water habitat in the back marsh for brackish-salt water organisms and filter the surface run-off water before it flows into Puget Sound.

#### Conclusions

1. Improvement of the existing road or placement of a bridge at the existing site would have less impacts than placement of a bridge or road somewhere else.
2. A section 404 permit would be required for a new road somewhere else in the marsh or for extended improvements of the existing road if it includes widening or otherwise placing dirt in the existing marsh. A permit for the upgrading would have less impacts and less opposition from resource agencies.
3. Placement of a road and/or picnic tables on the dune will not significantly impact the dune vegetation or any wildlife.

4. Placement of the ramp will impact a small amount of eelgrass.
5. Enhancement of the back marsh would more than mitigate all project associated impacts to vegetation or wildlife.

Table 1: Known and expected bird use on Possession Beach and the adjacent uplands.

<u>Common Name</u>	<u>*</u>	<u>Location</u>
Sharp-shinned hawk	o	bluff
Red-tailed hawk	e	bluff
Ruffed grouse	e	bluff
Great-blue heron	o	black-marsh
Killdeer	e	marsh-beach
Black turnstone	e	beach
Dunlin	e	marsh
Sanderling	e	beach
Least sandpiper	e	marsh
Western sandpiper	e	marsh
Glaucous-winged gull	o	sound
Herring gull	o	sound
Mew gull	o	sound
Bonapartes gull	o	sound
Pigeon guillemot	e	sound
Rhinoceros auklet	e	sound
Band-tail ed pigeon	o	bluff
Rufous hummingbird	e	bluff
King Fisher	o	marsh
Flicker	e	bluff
Pileated woodpecker	sign	bluff
Downy woodpecker	o	bluff
Hairy woodpecker	e	bluff
Barn swallow	e	all
Violet-green swallow	e	all
Steller's jay	o	bluff
N.W. crow	o	all
Chestnut-backed chickadee	o	bluff
B.C. chickadee	e	bluff
Common bushtit	e	bluff
Winter wren	o	bluff-wren
American robin	o	residence
Varied thrush	e	bluff
Kinglets	e	bluff
American goldfinch	o	all
Song sparrow	o	marsh
White-crowned sparrow	o	beach

\* e = expected  
o = observed

Table 2: Mammal use of Possession Beach.

<u>Common Name</u>	<u>*</u>	<u>Location</u>
Shrews	e	bluff
Raccoon	s	marsh
Chickaree	o	bluff
Deer-mouse	s	residence
House-mouse	s	residence
Vole	s	bluff-marsh
Black-tailed deer	s	marsh-bluff

\* e = expected  
s = sign  
o = observed

# Appendix B1

Biological Evaluation

Possession Beach Waterfront Park

for

Port District of South Whidby Island

by

Independent Ecological Services  
1514 Muirhead Avenue  
Olympia, WA 98502

## Existing Conditions

### Physical Description

#### General

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#### Beach - Wetland Vegetation

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bluff. This creates a natural buffer between the hill or bluff ecosystems and the beach system. The dominant plant species throughout the wetland is Atriplex patula (arache). The other common species are saltgrass (Distichlis spicata) in the lowest part of the wetland next to the small channel, arrow grass (Triglochin maritimum) scattered in small bunches and silverweed (Patentilla pacifica) which is more prevalent at the south end of the wetland but is present throughout. Water parsley (Oenanthe sarmentosa), buttercup (Ranunculus repens), and dock (Rumex maritimus) were scattered in the higher portions of the wetland.

The permanent mature dune is vegetated with European beachgrass (Ammophila arenaria) and a mix of other species. Beach grass extends down over the back dune to the edge of the saltmarsh and across the dune to the edge of the pebble beach. Other dune grass species present are dune grass (Elymus mollis) and tufted hairgrass (Deschampsia cespitosa). Dune grass is uncommon and scattered while hairgrass is common on the back dune, particularly in areas where driving has impacted the beach grass. A variety of other species are scattered through the beach grass. Most common are plaintain (Plantago maritima), vetch (Vicia spp.) and thistle (Cirsium arevense). Two fall daisy's, Douglas's Aster (Aster douglasii) and gum plant (Grindelia oregana) add color to the beach. Eight to 10 stunted Douglas fir (Pseudotsuga menziesii) are growing along the crown of the dune. None are large but they are established and should continue

to survive unless there is damage to their roots or they are unstabilized allowing the wind to uproot them.

The pebble-gravel beach is unvegetated at tide levels between +12 and +4 to +6. At about +6 sea lettuce (Ulva spp.) starts appearing attached to larger rocks. It continues down into the eelgrass bed (Zostera marina). Eelgrass grows from approximately 0 to -6 MLLW across the front of the park. The density varies but averages about 15 turions (shoots) per/meter squared. Much of the area is spare while others are clumped.

#### Bluff Vegetation

The steep bluff above the beach is densely forested except for the area cleared for the existing residence. Only tree species and relative abundance were determined. The higher bluff was forested with a mix of coniferous and deciduous trees. Douglas fir, western hemlock (Tsuga heterophylla), and western red cedar (Thuja plicata) are mixed with big leaf maple (Acer macrophyllum) and red alder (Alnus rubra) throughout with a few englemann spruce (Picea engelmannii) along the toe of the slope abutting the wetland.

#### Wildlife

Wildlife is limited on the beach and back marsh areas. Observations were limited to one 3 hour visit and reading of sign. The only observations were of birds. Activity was low because of the time of year, however, sign did not indicate large summer nesting populations.

Birds:

Small passerine birds dominated both the bluff and the beach areas of the park. At the time of the site visit the most abundant birds were migrating American goldfish (Spinus tristus). They were feeding on thistle down and other seeds along the edge of the forested slope and the wetland. Most activity was in the blackberry - rose bramble. Other small birds using the site were the song sparrow (Melospiza melodia) and white - crowned sparrow (Zonotrichia leucophrys). Great blue heron (Ardea herodias) perch in the large trees and hunt the back marsh and beach. A sharp - shinned hawk (Accipiter striatus) was hunting the forested edge on October 11, 1984. A list of expected bird use is included as appendix 1.

Sign of three mammals were identified on the beach - wetland. They were deer (Odocoileus hemionus), raccoon (Procyon lotor) and vole (Microtis spp.) sign was in the back marsh and on the road leading across the marsh to the dune. Deer were feeding and bedding down in the drier portions of the marsh. Raccoons were working the small channel in the back marsh. Vole runs were found in the upper reaches of the marsh. The only mammal sighted in the woods was a chickaree (Tamiascirus douglasii). Surveyors were working in the area which effected wildlife observations. Sea mammals identified that are expected to use the offshore area are included with other expected mammals in Appendix 2.

Samples of beach sands were examined for benthic productivity. Levels of harpacticoids and amphipods were

extremely low. Since this was only a random non-quantified sample no numbers per meter were estimated. A further inspections of the pebble-rock strata was completed. No crabs, insects or insect larvae, or benthic macrophytes were found. Rocks below +2 supported barnacles (Balanus galindula).

#### Project Impacts

Impacts are limited to the effects of three alternatives to the back marsh, the dune, and the shallow water habitats. They are (1) placing a bridge or improving the road at the existing road location (2) placing a bridge or a new road to the north of the existing road and (3) placing the road at the south edge of the property.

##### Alternative 1:

Crossing the back marsh at the existing road site would have the less impacts to the back marsh than alternative 2. The major impacts already have occurred. Widening and raising the road would have minimal impacts to small areas of marsh on both sides of the existing road. Major losses would be a few feet of Atriplex on each side, some blackberry on the bluff side and a few clumps of dune grass on the beach side. A bridge would have no negative impacts on the marsh and could create an enhancement if the existing road was removed. The marsh could also be enhanced if a culvert was placed in the road.

##### Alternative 2:

Creating a new road across the back marsh would

inundate a significant amount of viable saltmarsh. Because of the configuration of the marsh the fill would have to be longer than the existing road. Also unless the hill side was cut the fill would have to be deeper on the bluff side of the marsh thus increasing the footprint width to accomodate the roadside slope. The existing road could be removed and revegetated to marsh but there would still be a net loss of wetlands as well as additional short term losses until the removed road area fully reverted to marsh.

A bridge would not impact the wetland but would require removal of bluff vegetation and dune grass. Also, depending on its location, it could effect the limited trees on the dune. If it were placed at the north end of the park the road leading to the bridge would require the removal of a number of large fir and big-leaf maple. It would also effect one of the perching areas used by great-blue heron.

#### Alternative 3:

Placing a road across the south end of the back marsh would eliminate all impacts associated with filling in the marsh. It would also reduce the potential for water detention in the marsh caused by culverts required for the other two alternatives. Impacts to the dune would also be lessened since the south portion of the dune is becoming overrun by invader species at the expense of the dune grasses. Accumulating the runoff from the road into the north end of the back marsh will also help maintain a wetter marsh which will allow the desirable wetland plants to out-compete less wet tolerant

invader species.

All alternatives would require the removal of dune grass and the creation of a turn around and approach road to the boat launching ramp. Impacts would be minimal at any site. The loss would create a cleared space which will allow waters that now breach the dune to flow faster and possibly deposit more debris than now occurs with the heavy stand of grass. This could increase the level of flooding in that portion of the back marsh. This is not a significant impact unless erosion of the dune should occur. Proper stabilization of the ramp approach would prevent this from occurring.

The ramp, depending on the style, will cover a portion of the beach. Because of the limited life forms in the substrate, this in itself would have negligible impacts. There is the possibility that littoral drift could be interrupted if the ramp is not correctly designed and constructed. This could create beach stabilization problems that could effect the limited organisms in the sand. The ramp will impact a small portion of the eelgrass bed below 0 MLLW. If a gridded ramp is used some eelgrass may reestablish itself between the concrete slabs.

The establishment of picnic areas will remove dune grass. The impacts will depend on the amounts of grass removed. If pockets for individual areas are cleared leaving the bulk of the dune undisturbed, there will be little, if any, impacts. Removal or mowing of all of the grass would remove the natural filter and dam effects that the grass

now serves. Under existing conditions, the grass slows water and collects out smaller particles when the tides exceed the elevation of the dune. This reduces the potential for back dune erosion and the filling of the salt marsh with sand or wood. Removal of the grass would reduce those effects.

#### Wildlife Impacts

Removal of larger trees for an approach road to alternative two could eliminate perching trees for herons, however, it will not reduce or otherwise negatively effect heron activity. Human activity may regulate heron feeding activity in the immediate park area.

Placement of a picnic grounds may attract gulls and raccoons but there would be no negative aspects of their increased use. Other animal use should not be effected except for short periods when people use is heavy. At this time they will move back, then return when the camp ground is empty.

#### Mitigation - enhancement

Because the impacts to wetlands and the dune are so minimal there is no real need for mitigation. However, since it is a park, the wetlands could be enhanced through some small measures. These are:

1. Place large enough culverts in all roads crossing the marsh to allow ready movement of water from the south to the north end.
2. Create an artificial breach at the south end of the park or, if possible, at the south end of the wetland to allow saltwater to flow in and out of the back marsh at tides in excess of +6 to +8 MLLW. This would enhance the marsh and create an

interesting area for park goers to observe and explore.

3. Direct all bluff run-off through the marsh. This would stimulate some diversity in the marsh, create a low water habitat in the back marsh for brackish-salt water organisms and filter the surface run-off water before it flows into Puget Sound.

### Conclusions

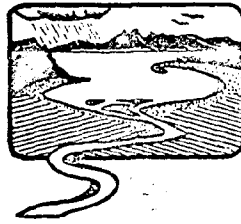
1. Improvement of the existing road or placement of a bridge at the existing site would have less impacts than placement of a bridge or road at the north end of the marsh. Placing the road at the south end of the marsh would have the least effect of any alternative.
2. A section 404 permit would be required for a new road somewhere else in the marsh or for extended improvements of the existing road if it includes widening or otherwise placing dirt in the existing marsh. A permit for the upgrading would have less impacts and less opposition from resource agencies. A road to the south would not require a permit.
3. Placement of a road and/or picnic tables on the dune will not significantly impact the dune vegetation or any wildlife.
4. Placement of the ramp will impact a small amount of eelgrass.
5. Enhancement of the back marsh would more than mitigate all project associated impacts to vegetation or wildlife.

This constitutes the final biological report and impacts analysis for the Possession Beach Waterfront Park proposal.

R.L. Van Wormer  
Senior Biologist



WOLF BAUER P.E.  
CONSULTING ENGINEER



5622 Seaview Avenue N.W.  
Seattle, Washington 98107 U.S.A.  
Telephone (206) 783-2119

September 11, 1984

## Appendix D

Mr. Fred L. Beck, ASLA  
BECK & BAIRD  
P.O. Box 99153  
Seattle 98199

RE: POSSESSION BEACH WATERFRONT PARK  
GEO-HYDRAULIC SHORE SYSTEM EVALUATION

Dear Mr. Beck:

This reporting letter is in response to your request for an analysis of the local shore zone at the proposed park site.

THE SHORE SYSTEM      The property is part of a Drift-Sector system that extends from the Possession Point feeder bluff northward along Possession Sound shoreline past the property site. The local shore is composed of a barrier beach accreted by predominant southerly wave action. The beach berm encloses an alternately flushed fresh-water and salt-water tidal lagoon channel and associated marsh. This system is typical of what I call a bluff-offset berm system where wave action moves material tangent to a receding erosion bluff across an offset shoreline corner.

The feeder-bluff still contributes sporadic sand and gravel to this property beach system, albeit at a reduced rate due to updrift bulk-heading.

The beach berm is fairly wide and stable, and should remain so if not intruded by bulkheads, or made impervious to storm wave-swash percolation by fills, paving, or structures. Native dunegrass (lyme beach grass) landward of the berm crest should be retained and encouraged for root tiedown during storm wave overrun.

THE MARSH SYSTEM      This particular bio- and geo-hydraulic shore system finds itself near a final phase in terms of the enclosed tidal channel and marsh which are occasionally activated by storm-tide marine water and/or rainstorm surface water. A berm breach about 800' north of the proposed boat ramp location acts as both salt water inlet and outflow under ebb conditions. In view of this tidal connection, this marsh - lagoon complex must be considered as a backshore component of the shore. Drainage is somewhat variable and haphazard through the partially blocked breach gap in the berm, as well as by percolation through the berm proper.

The marsh - protective beach berm is about 100' wide above MHHW elevation within the property and becomes narrower and lower northward. The tidal channel and marsh have a slight downward slope to the north as they widen and become more saline in character. (appearance of salicornia flora under more brackish conditions past the north boundary). The original tidal channel has been interrupted by several private road fills (without culverting), including one on the

property. Thus runoff, or marine flooding has to drain over these road sills. The northern half of the lower and enlarged channel is partly choked with driftlogs and debris which further degrade the natural biologic and geohydraulic system.

#### GENERAL LONG-TERM USE ASSESSMENTS

Accretion shoreforms such

as points, spits, tombolos,

and barrier berms with their Class I dry, above - tide beaches are an endangered shoreline species. Less than 3% of total Puget Sound beach shores are of this type. They usually fulfill several important functions in terms of their dependent lagoon - marsh habitats, as well as their high priority recreational resource values. Many counties have allowed them to be buried under housing and consequential riprap rubble, - and thus lost their functional value as a magnet for attracting upland development and tax base.

It would seem that this could happen here too, unless the feeder bluff - driftway - accretion terminal shore system is recognized and managed as an integrated entity. "Land-care" rather than "Land-use" is needed in such cases. The "park" designation for this property is a saving feature as long as the berm and marsh system is enhanced and kept intact, irrespective of arbitrary property boundaries. In other words, if the South Whidbey Island Port District is to acquire this property for use as a true park, and not primarily as a parking convenience to

a few boaters, then the County and District need to upgrade the total lagoon - marsh - berm system past the proposed property line.

#### SPECIFIC SUGGESTIONS

##### 1. BEACH BERM ENHANCEMENT

- a. Do not allow further foreshore structures to impede sand and gravel drift between the property and Possession Point bluff.
- b. Retain and/or improve the uniformity and crest elevation of the beach berm throughout the marsh backshore length.
- c. Vegetate with dune grass where needed for uniform root tiedown.
- d. Do not reduce berm porosity by paving or structural fills.
- e. Design boat launch approach over berm backshore and crest with porous, or mesh steel mats.
- f. Consider any turn-arounds landward of the marsh area.
- g. Design some portability and flexibility into foreshore ramp flush with beach surface.
- h. Locate boat launch with maximum separation from park beach activities and audio - visual spacing.
- i. Consider south-end of marsh crossing as least sensitive area due to higher and dryer elevation.

##### 2. MARSH - LAGOON ENHANCEMENT

- a. Install adequate culverts in all channel - dammed crossings
- b. Clean out drift logs and debris in the northern marsh area
- c. Consider sill level and water passage control and management at the present unreliable choked inlet - outlet breach gap in the berm.

I trust that these observations will be of some aid in your design and management approach to this beach park development.

Very truly yours,



# SHAPIRO & ASSOCIATES<sup>92</sup>

The Smith Tower  
Suite 1812  
506 Second Avenue

Seattle  
Washington 98104

206/624-9190

## MEMORANDUM

TO: Ann Dold, Island County Planning Department  
FROM: Tina Miller, Shapiro & Associates, Inc. *TM*  
DATE: June 30, 1986  
RE: Island County Wetland Regulations

### Purpose

A field visit to gather information about wetlands types present on Camano Island, Island County, was completed June 11, 1986. The purpose of this cursory field investigation was to identify the diversity and abundance of wetland habitat types, investigate habitat functions, and to evaluate the accuracy of the National Wetland Inventory (NWI) and Coastal Zone Atlas (CZA) maps.

Camano Island is surrounded by the following water bodies: Port Susan Bay to the east, Saratoga Passage to the west, and Skagit Bay to the north. All the coastal systems are identified as estuarine on the NWI map. The estuarine system includes estuaries, lagoons, shorelines, and off-shore areas of continuously diluted sea water (less than 0.5 o/oo). One lake on Camano Island has been mapped as a Lacustrine wetland. All other lakes and vegetated wetlands found away from the shoreland of the island are identified as Palustrine wetlands because they are smaller than 20 acres in size and have no salt content. No marine, or riverine wetlands systems are present on Camano Island.

### Estuarine Systems

There are four major saltmarsh/mudflat systems surrounding Camano Island within Island County.

Livingston Bay is located in the northwest corner of Port Susan Bay. This area consists of a broad expanse of mudflats with a cobble beach along the shoreline. Eelgrass (*Zostera marina*) is present mostly on the sub-tidal flats of the bay. Near shore there is a band of saltmarsh. This saltmarsh is dominated by cordgrass (*Spartina townsendii*), an introduced species. Along with the cordgrass are patches of American three square bulrush (*Scirpus americanus*) and seaside arrowgrass (*Triglochin maritimum*). This saltmarsh was not mapped on either NWI or CZA maps. In 1978, the Washington Department of Game (WDG) estimated there was 1.5 tossocks per acre of cordgrass growing on the northwest side of Port Susan Bay, with a total coverage of six acres for all of Port Susan Bay. SHAPIRO's observations in 1986 found numerous solid patches of cordgrass along the shoreline, with continuing pioneering into

Memo to Ann Dold  
June 30, 1986  
Page Two

the mudflats. This area is considered to have high wildlife value by WDG, and by the CZA maps. Waterfowl, shorebirds, eagles, clams, crabs, salmon, all use this bay. Residential use is found along the north side of the bay within 50 feet of the beach. Concern has been expressed regarding the invasion of cordgrass into this area.

Triangle Cove is located just south of Livingston Bay. This 230 acre bay has been partially diked at the mouth. The area between the dike and Port Susan Bay, identified as emergent marsh by NWI, is now upland grassland. No emergent saltmarsh vegetation was mapped as occurring in this bay in 1973 by NWI. The WDG observed bulrush and cordgrass in the bay in 1977. In 1986, observations found the bay to be roughly 80% vegetated. Here again, introduced cordgrass is present and appears to be expanding throughout the mudflats. Wildlife values are high, especially for wintering waterfowl and shorebirds. Hunting does occur in the back bay. Residents occur all along the top of the dike adjacent to both Triangle Cove and Port Susan Bay.

Elgers Bay is approximately 80 acres in size and is located on the west side of the island, south of Camano Island State Park. The backbay here is also partially diked. The saltmarsh consists mostly of saltgrass (*Distichlis spicata*), pickle weed (*Salicornia virginica*), and glasswort (*Jaumea carnosa*). In front of the dike is a broad expanse of mudflats covered with eelgrass and sea lettuce (*Ulva* sp.). This area was mapped accurately by the CZA, but the NWI map does not show the presence of eelgrass and labels the driftwood in the back bay as mudflats. The area is used by dabbling ducks, diving ducks, raptors, gulls and shorebirds. Surrounding land use is residential homes, some within 50 feet of the beach.

A small part of the Skagit Flat system is located along the northwest shoreline of Camano Island. This area is extensively covered with a bulrush marsh. The Skagit Flat Delta was recognized as having the highest wetland value by the WDG in 1977. Snow geese and swans are two significant species found using this area. Numerous other species of waterfowl, shorebirds, raptors, fish, and clams are present. The area within Island County is part of WDG's habitat management area. Recreational values are also high because of hunting and bird watching.

Most of the rest of the shoreline of Camano Island is covered with cobble/sand beaches. Algae is found attached to cobbles in the intertidal zone. Some areas have numerous recreational homes adjacent to the beach, one such example is Tyee Beach. However, there are areas with wide sandy beaches, such as the area along the southwest side of the island from Camp Diana to Pebble Beach. These beaches are mostly unvegetated (flat) with some aquatic bed (algae) vegetation. The NWI maps have identified this area as predominantly aquatic bed. There again, the CZA maps appear to be more accurate based on these 1986

observations. The shoreline was identified in the CZA as being used by numerous waterfowl, with scoters being abundant. Field observations support this.

#### Lacustrine

Kristoferson Lake is the only lacustrine system present on Camano Island. This lake is over 20 acres in size and deeper than two meters (6.6 feet). Aquatic bed vegetation (water lily, Nymphaea odorata) is presently found around the edges of the lake. This vegetation was missed by the NWI mapping. Adjacent to the water lilies are cattails (Typha latifolia) and above the shoreline a thin row of willows (Salix spp.). This lake is surrounded by grassland (80%) and deciduous forest (20%).

This lacustrine system drains into Triangle Cove through a series of Palustrine willow shrub swamps adjacent to the creek.

#### Palustrine

No palustrine systems on Camano Island are protected by Coastal Zone Management because they are below 20 acres in size. Most of the palustrine systems on the island are less than five acres in size. Typical observed freshwater wetlands were small open water ponds surrounded by cattails (Typha latifolia), iris (Iris pseudacorus) or willows (Salix spp.) These were found on numerous farmlands of the island. These small systems can be valuable for migrating waterfowl. Red-wing blackbirds and marsh wrens were observed breeding in several of these marshes.

The other type of palustrine system commonly observed was in wet pastures. These emergent marshes typically support soft rush (Juncus effusus), buttercups (Ranunculus sp.), sedge (Carex sp.), and dock (Rumex sp.) vegetation. Most of these palustrine systems are small, less than five acres in size. From this brief field visit, it appears that NWI did not map this type of wetland if it was less than about two or three acres in size. The habitat value of these wet pastures are usually lower than wetlands with combinations of open water and marsh and/or swamp habitats.

#### Conclusion

Interior Camano Island appears to have a limited amount of freshwater wetlands, while the shoreline possesses some highly valuable estuarine saltmarsh and aquatic bed systems. Freshwater wetlands are typically small open water ponds surrounded by marshes or swamps. The NWI mapping usually did not identify these systems if they were smaller than two or three acres. These palustrine systems on the island are also not mapped or protected by Shoreline Management.



Memo to Ann Dold  
June 30, 1986  
Page Four

There are four major saltmarsh/mudflat estuarine systems surrounding the island. These systems are valuable for fish and wildlife. Introduced cordgrass was observed colonizing the mudflats of Livingston Bay and Triangle Cove. On the Skagit Flat delta there are large bulrush marshes that are considered important for snow geese and swans. Cobble/sand beaches are found along most of the shoreline of Camano Island. In most locations, the CZA maps have accurately identified the wetland communities along the shoreline. Exceptions to this are the expanding salt marshes in Livingston and Triangle Cove. Recreational and residential housing is found adjacent to the shoreline in numerous areas. Homes can typically be within 50 feet of the beach.

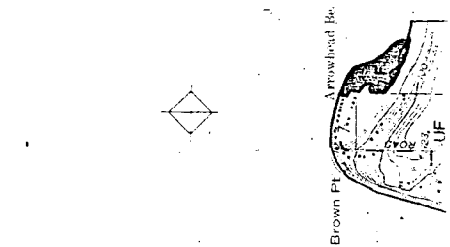
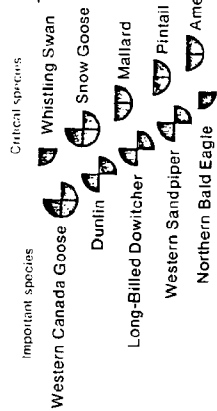
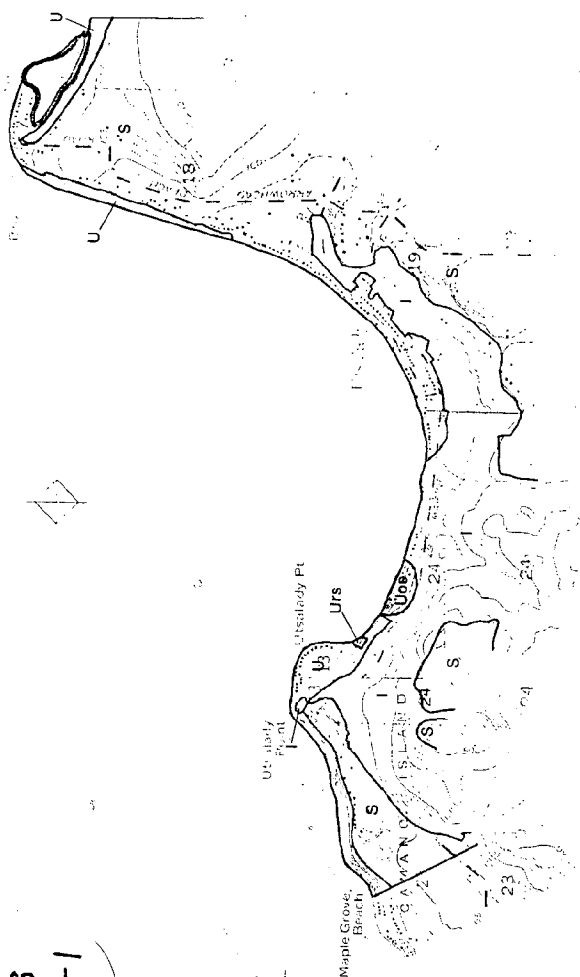
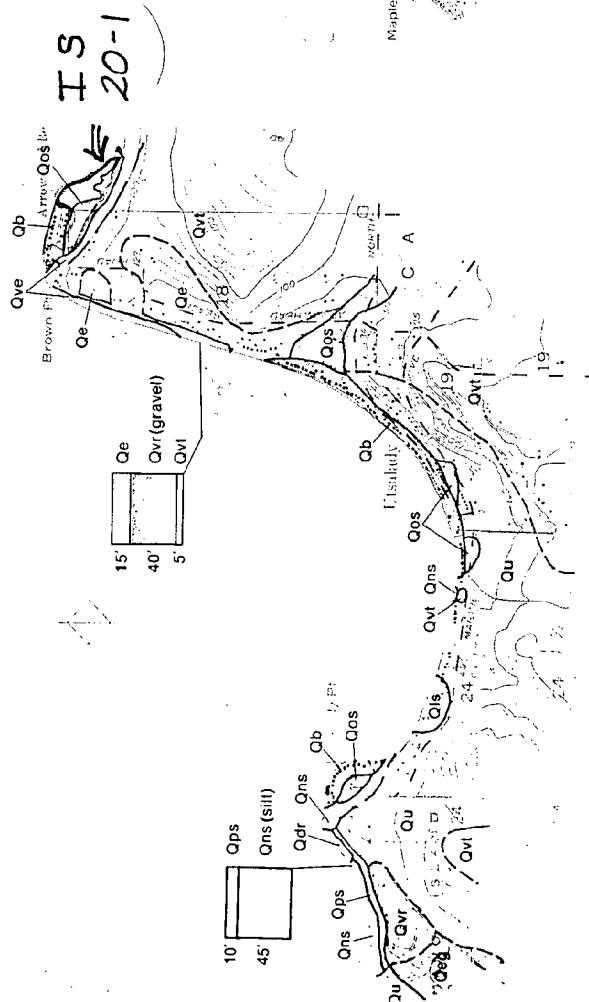
WETLAND EVALUATION: #IS 20-1 (Arrowhead Beach)

LOCATION: SECTION 17 AND 18, TOWNSHIP 32N, RANGE 3 E.

CZM ATLAS MAP #: IS 20

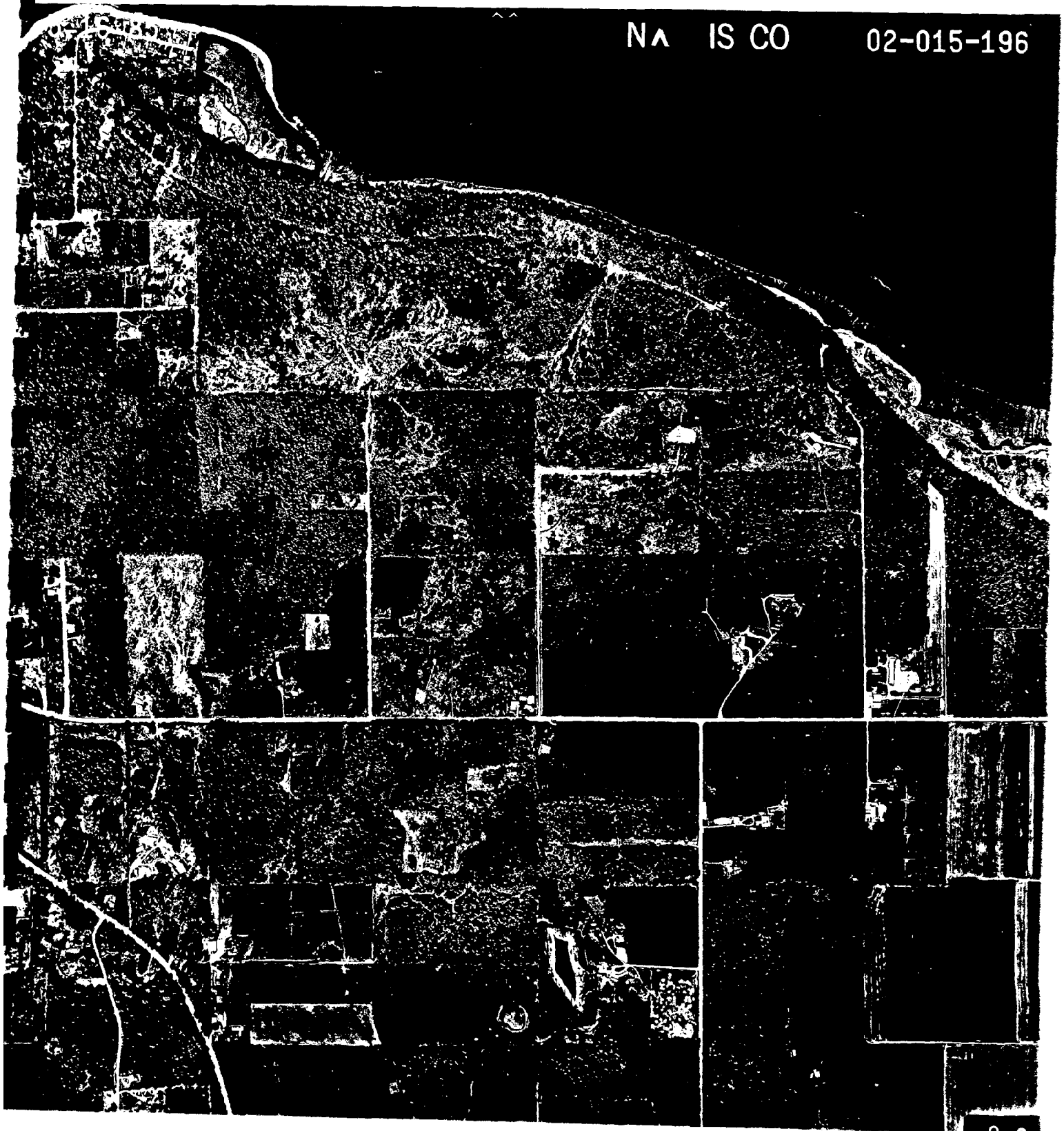
WETLAND CHARACTERISTICS: This wetland has been separated into two components by a dike. To the east, the undiked portion is exposed to the marine environment, exhibiting tidal channels and supporting a wide range of salt tolerant plant species. To the west, the diked portion is characterized by a remnant marsh abutting a high bluff to the south and adjacent to a residential development on the north. Apparently saltwater intrudes through the dike at one point, as there is a tidal channel along which the following saltwater species were observed: Distichlis spicata (salt grass), Atriplex patula (fat hen), Aster subspicatus (Douglas aster) and Potentilla pacifica (silver weed). The tidal channel meanders westward for about 100 feet from the dike before losing its definition. From here on freshwater marsh species become prevalent, attesting to the runoff contribution from the adjacent bluffs.

WETLAND VALUES: The undiked portion functions as a saltmarsh with all the attendant contributions, both in terms of wildlife habitat, production and water quality control. The diked portion is a feeble remnant of a once robust salt marsh community, functioning now as a storm-water retention area and perhaps to some degree as a water quality control on upland runoff.



NA IS CO

02-015-196



WETLAND EVALUATION: IS 23-1 (Onamac Point)

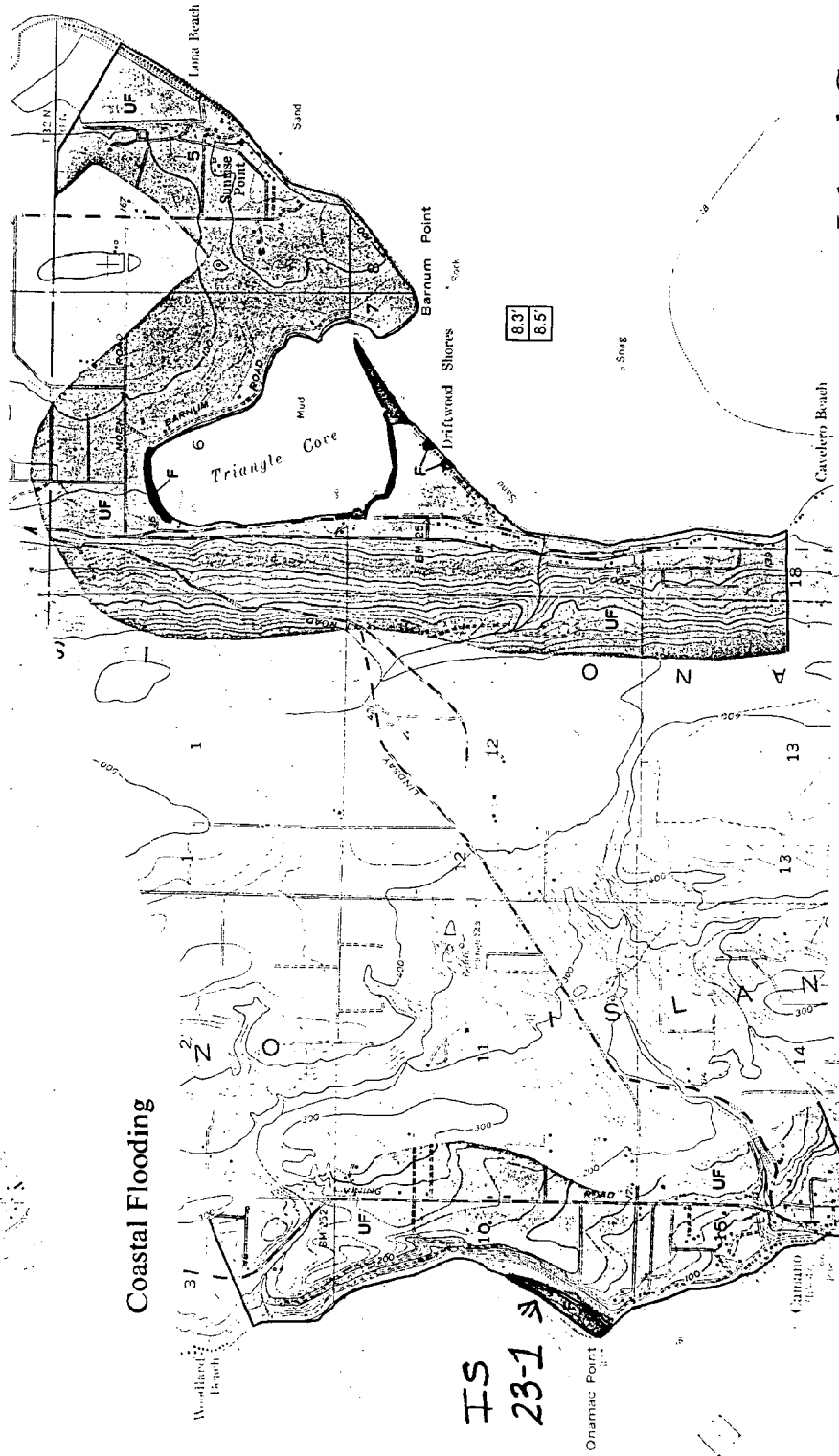
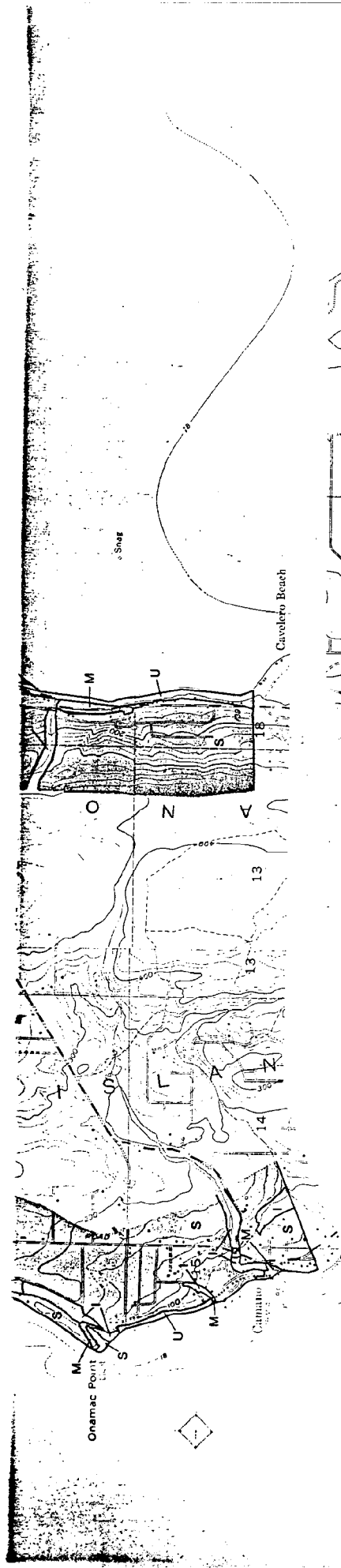
LOCATION: SECTION 10, TOWNSHIP 31N, RANGE 2E.

CZM ATLAS MAP #: IS-23

WETLAND CHARACTERISTICS: Once a tidal lagoon behind an accretion berm, this low lying area has now been cut off from direct marine influence. The present owner impounded the tidal channel, although saltwater still infiltrates during low tide. This is evidenced by salt tolerant plant species behind the berm and brackish soil conditions.

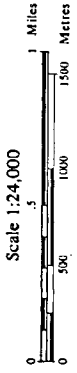
Upland runoff from adjacent steep slopes, contributes to the marsh conditions at the base. There is an open water pond at the southend, evidently dredged by the development interest that subdivided Onamac Point.

WETLAND EVALUATION: Without a direct connection to the marine environment, this wetland has lost much of its former value as a saltmarsh. Nevertheless, upland runoff must drain through this system and an element of water quality control is provided. In addition, the marsh provides some wildlife habitat and forage.



Coastal Flooding

IS  
23-1



Island County

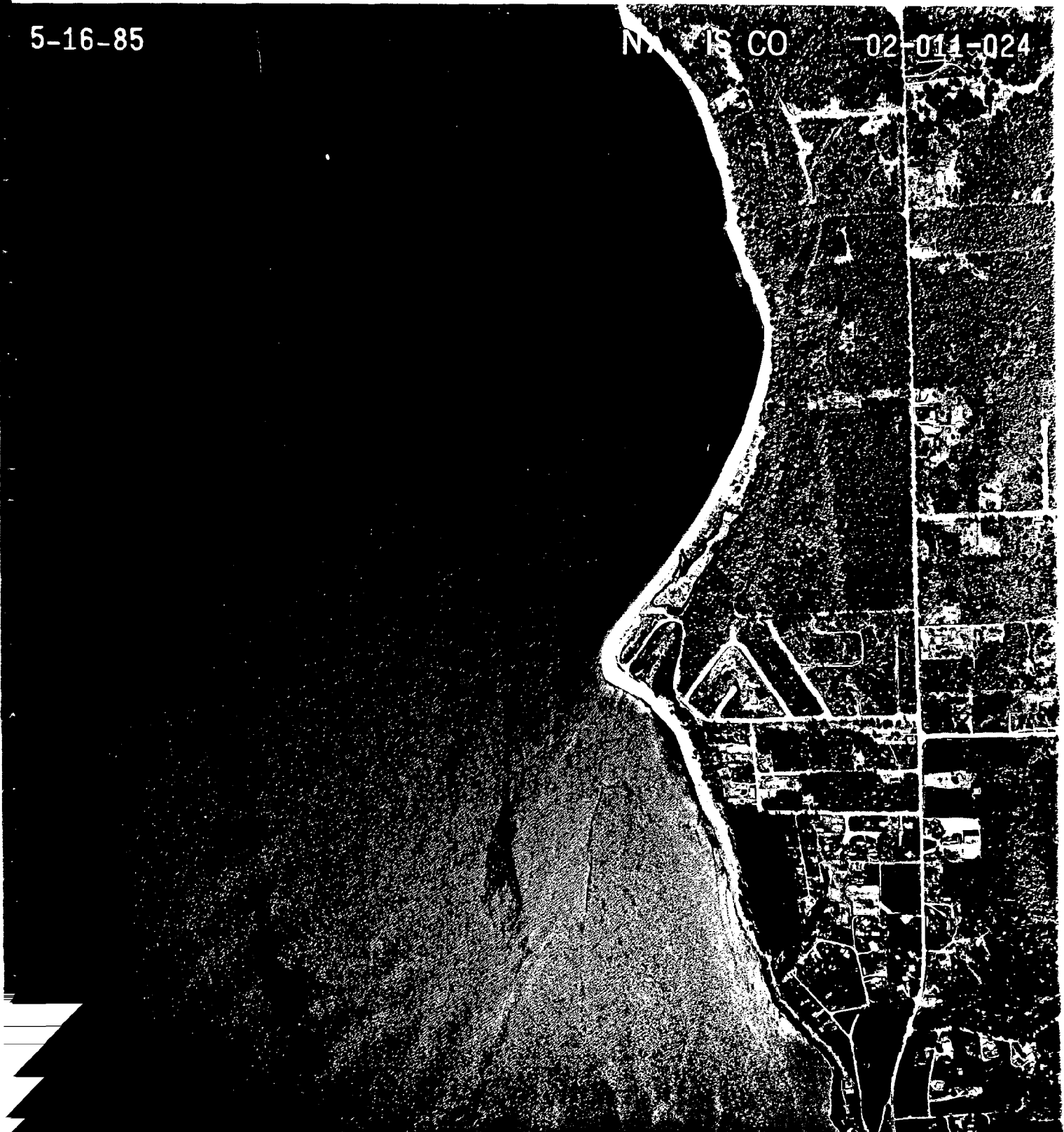
Coastal Zone Atlas of Washington IS

University  
Washington  
Cartographic  
Laboratory

5-16-85

NA 15 CO

02-011-024



WETLAND EVALUATION #IS 25-1 (CAMANO COUNTRY CLUB)

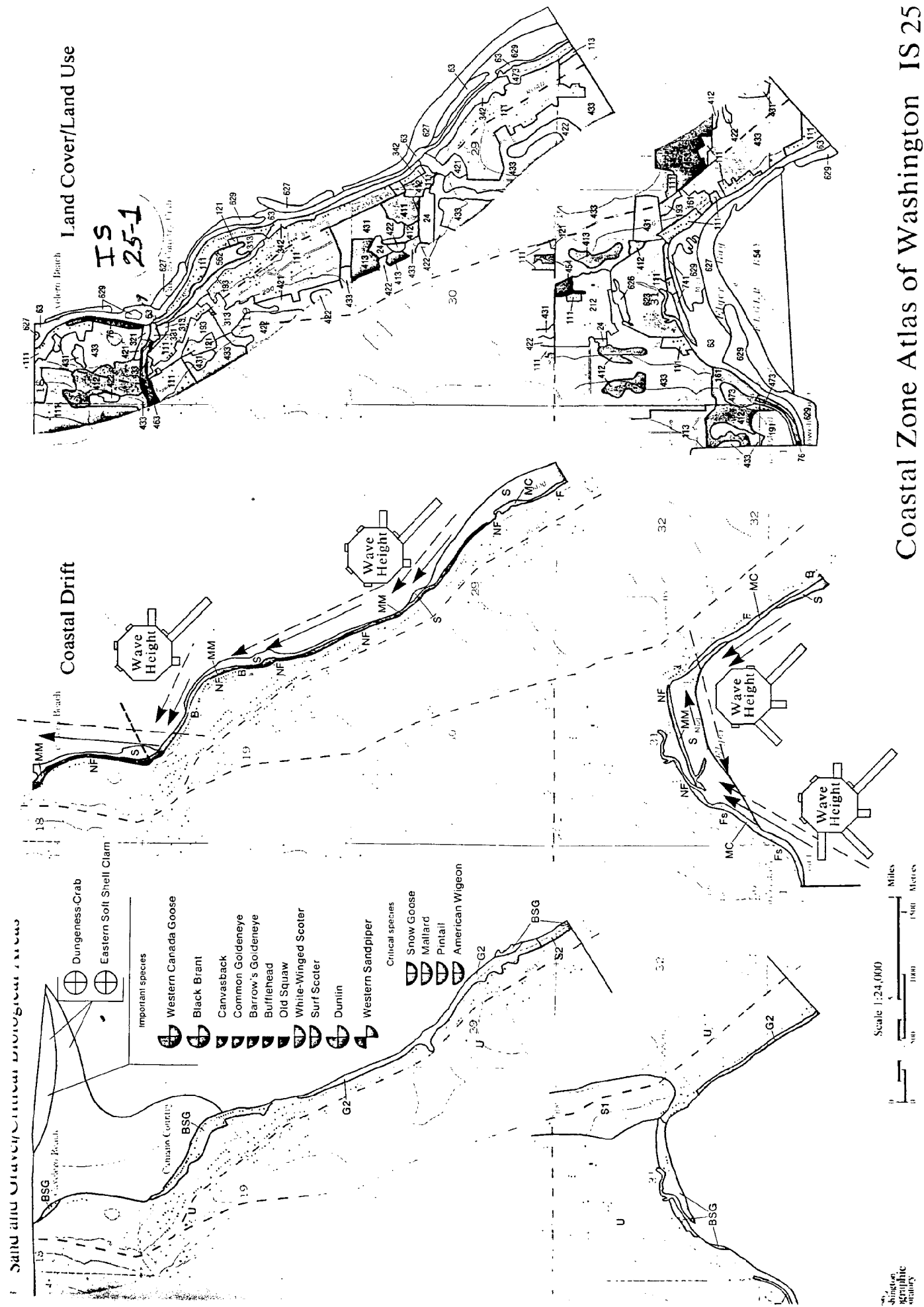
LOCATION:        NORTHWEST QUARTER OF SECTION 19, TOWNSHIP 31  
                 NORTH, RANGE 3 EAST, W.M.

CZM MAP #:    IS 25

WETLAND CHARACTERISTICS: This is the Camano County Club Lagoon. At one time it was a marsh impounded behind an accreting berm. As part of the residential development in this area, the marsh was dredged out and is now maintained as an open water lagoon. It is fed by an upland stream and the outlet to the sea is controlled by way of a tidegate at the North end. There is very little evidence of wetland vegetation in or surrounding the lagoon. A mallard was observed using the area during site inspection.

WETLAND VALUES: By and large the heavily developed residential area discourages wildlife from using the area. There is very little cover for nesting and feeding, although the contributing stream does provide dense low brush habitat. Further, the tidegate prevents the marine waters from influencing this system and there is probably little in the way of production that is commonly associated with saltmarshes. Overall, this lagoon has been altered to such an extent that it does not provide outstanding wildlife habitat or feeding values. However, there may be some water quality functions, as the lagoon acts as a settling pond for stream effluent, before it enters the marine environment.

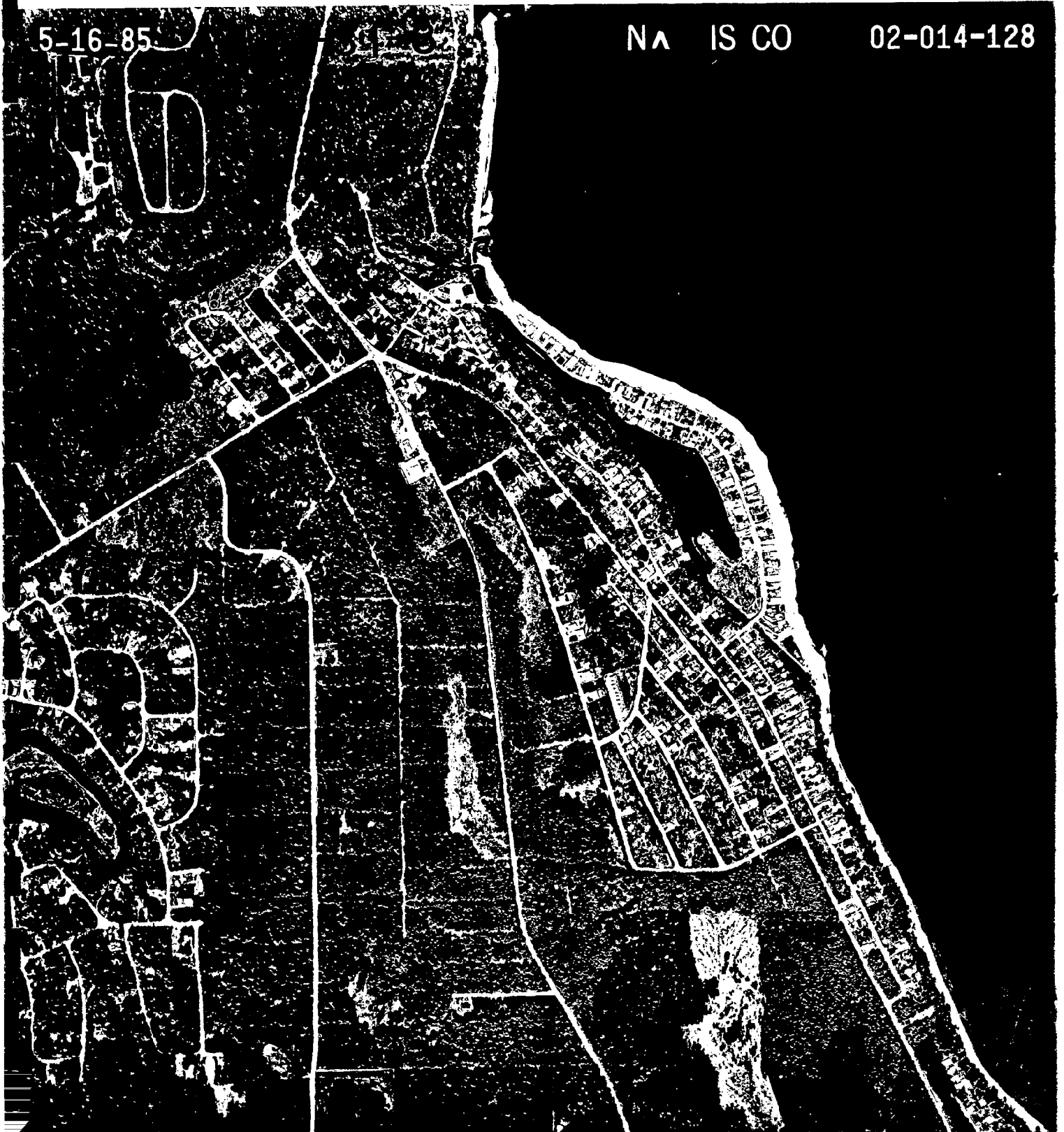




5-16-85

NA IS CO

02-014-128



# Land Cover/Land Use for Island, Snohomish and King Counties

Urban	11 Residential	111 Nonwooded Residential	18 Open Land	181 Scraped Area	42 Broadleaf Forest	61 Wetlands	61 Forested Wetland	
		112 High Density Residential		182 Dredge and Fill				
		113 Wooded Residential		183 Refuse Station				
	12 Commercial/Services	121 Business/Government	19 Recreation	191 Park	43 Mixed Forest		611 Freshwater Swamp	
		122 Commercial/Light Industrial		192 Golf Course			612 Brackish Swamp	
		123 Institutional		193 Urban Wooded			62 Vegetated Wetland, Nonforested	
							621 Inland Freshwater Marsh	
							622 Coastal Freshwater Marsh	
							623 Salt Marsh	
Industrial	13 Industrial	131 Light Industry	21 Crop/Pasture	211 Row Crops	44 Open Woodland	63	624 Bog	
		132 Heavy Industry		212 Field Crops/Pasture			625 Salt Meadow	
		133 Petroleum/Chemical Processing and Storage		213 Other			626 Brackish Marsh	
		134 Food Processing		22 Orchard/Vineyard/Nursery			627 Seagrass	
	14 Transportation/Utilities	141 Airport	23 Mariculture	221 Orchard	45 Disturbed Forest		628 Kelp Community	
		142 Ferry Service		222 Vineyard			629 Other Algal Community	
		143 Highway		223 Nursery			63 Beach Substrate	
		144 Railroad					631 Rock (R)	
		146 Bridge					632 Cobble (Cob)	
		147 Power Line and Right-of-Way					633 Mixed Coarse (MC)	
Port	15 Port	151 Commercial Cargo and Shipping	31 Grassland	311 Mariculture	47 Forested Bluff	64	634 Mixed Medium (MM)	
		152 Marina		312 Beach Grassland			635 Mixed Fine (MF)	
		153 Log Storage		313 Open Grassland			636 Sand (S)	
		155 Dike		32 Shrub			637 Sand-Silt or Muddy-Sand (S-Mud)	
	16 Construction	156 Breakwater	32 Successional Shrub	321 Successional Shrub	48 Riparian Forest		638 Silt/Clay or Mud (Mud)	
		158 Pier		322 Coastal Shrub				
				33 Riparian				
				34 Bluff				
				341 Grass				
				342 Shrub				
Extrictive	17 Extrictive	171 Residential Construction	33 Forested Uplands	331 Shrub	49 Nonforested, Vegetated Uplands	65		
		173 Sand, Gravel or Clay Extraction		341 Bluff				
		175 Abandoned Mining Operation		342 Grass				
				342 Shrub				
	18 Construction			343 Grass				
				343 Shrub				
				344 Grass				
				344 Shrub				
				345 Grass				
				345 Shrub				
Water	19 Water	191 River/Stream	51 Water	511 Estuarine Zone	52 Lake/Pond	71		
		192 Lake		521 Lake				
		193 Inland Pond		522 Inland Pond				
		194 Coastal Pond		524 Coastal Pond				
	20 Exposed and Other Lands	195 Farm Pond	53 Reservoir	526 Farm Pond	54 Bay/Estuary			
				53 Reservoir				
				54 Bay/Estuary				
				55 Impoundment				
				56 Lagoon				
				561 Enclosed Lagoon				
Vegetated Uplands	21 Vegetated Uplands	211 Coniferous Forest	57 Slough	562 Open Lagoon	58 Canal/Channel	72		
		212 Coniferous Forest, Regeneration		571 Freshwater Slough				
		213 Coniferous Forest, Pole Stage		572 Marine Slough				
		214 Pole Stage/Successional Shrub						
	22 Nonforested, Vegetated Uplands	221 Coniferous Forest, Second Growth	59					
		222 Coniferous Forest, Old Growth						

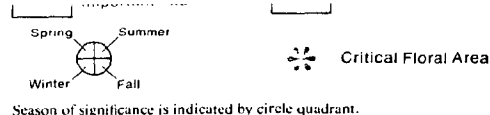
DATE

<b>S1</b> Low Quality	<b>S2</b> High Quality
<b>G1</b> Low Quality	<b>G3</b> High Quality
<b>G2</b> Intermediate Quality	

<b>BSG</b> Undifferentiated Beach Sand and Gravel
<b>U</b> No Known Sand or Gravel Deposits

Sand and Gravel Extractions

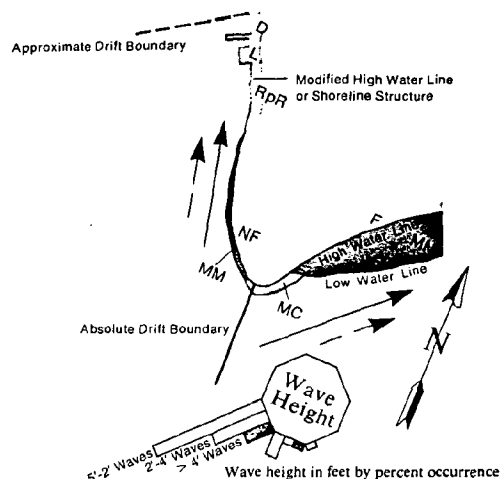
Striped areas indicate areas of coincidence between Sand and Gravel and Critical Biological Areas.



- Birds (Fall, Winter, Spring)
- Fishes (Spring, Fall)
- Mammals (All seasons)
- Invertebrates (Summer, Winter)

## Coastal Drift

### Example Drift Sector



Example: Waves of .5-2 feet come from the SW 20% of the time. waves of 2-4 feet come from the SW 10% of the time. waves of 4 feet or more come from the SW 5% of the time.

For detailed explanation and qualification of wave height and drift potential analyses, see text.

### Beach Materials

<b>R</b> Rock	<b>S</b> Sand
<b>Cob</b> Cobble	<b>S-Mud</b> Sand/Silt/Clay
<b>MC</b> Mixed Coarse Materials	<b>Mud</b> Silt/Clay
<b>MM</b> Mixed Medium Materials	<b>Mar</b> Organic (Marsh Deposits)
<b>MF</b> Mixed Fine Materials	

### Beach and Upland Processes

Upland Process			
	Not Feeding	Feeding	Feeding Substantial
Accreting	NF	F	Fs
Equilibrium	NF	F	Fs
Eroding	NF	F	Fs
Eroding Substantial	NF	F	Fs

Modified  
Mod

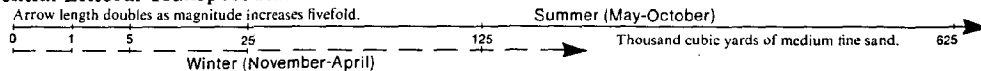
The color on the landward side of the high water line indicates active coastal processes at or near that line. Beach refers to the seaward side of the high water line. Upland refers to the landward side of the high water line.

### Shoreline Structures

<b>B</b> Bulkhead	<b>Do</b> Open Dock
<b>Br</b> Breakwater	<b>J</b> Jetty or Groin
<b>BrF</b> Floating Breakwater	<b>L</b> Launch Ramp
<b>D</b> Dock	<b>RpR</b> RipRap

### Potential Littoral Transport Rate

Arrow length doubles as magnitude increases fivefold.



## Land Cover/Land Use

### Urban

<b>11</b> Residential	<b>16</b> Construction
<b>12</b> Commercial/Services	<b>17</b> Extractive
<b>13</b> Industrial	<b>18</b> Open Land
<b>14</b> Transportation/Utilities	<b>19</b> Recreation
<b>15</b> Port	

### Agriculture

<b>21</b> Crop/Pasture	<b>23</b> Mariculture
<b>22</b> Orchard/Vineyard/Nursery	<b>24</b> Inactive Agriculture

### Nonforested, Vegetated Uplands

<b>31</b> Grassland	<b>33</b> Riparian
<b>32</b> Shrub	<b>34</b> Bluff

### Forested Uplands

<b>41</b> Coniferous Forest	<b>45</b> Disturbed Forest
<b>42</b> Broadleaf Forest	<b>46</b> Riparian Forest
<b>43</b> Mixed Forest	<b>47</b> Forested Bluff
<b>44</b> Open Woodland	

### Water

<b>51</b> River/Stream	<b>55</b> Impoundment
<b>52</b> Lake/Pond	<b>56</b> Lagoon
<b>53</b> Reservoir	<b>57</b> Slough
<b>54</b> Bay/Estuary	<b>58</b> Canal/Channel

### Wetlands

<b>61</b> Forested Wetland	<b>623 625</b> Salt Meadow, Salt Marsh, Brackish Marsh
<b>62</b> Vegetated Wetland, Nonforested	<b>627 628</b> Seagrass, Kelp, Other Algal Community
<b>621 622 624</b> Freshwater Marsh, Bog	<b>63</b> Beach Substrate

### Exposed and Other Lands

<b>72</b> Rock	<b>74</b> Spit
<b>73</b> Sand	<b>75</b> Bluff

\* Rock Island or Emergent Rock

---

EXHIBIT B

PRELIMINARY DRAFT

SHORELINE MASTER PROGRAM AMENDMENTS

EXHIBIT B

PRELIMINARY DRAFT

SHORELINE MASTER PROGRAM AMENDMENTS

Protective standards for marshes,  
bogs and swamps within shoreline  
jurisdiction.

ISLAND COUNTY PLANNING DEPARTMENT

The preparation of this report  
was financially aided through  
a Grant from the Washington  
State Department of Ecology with  
funds obtained from the National  
Oceanic and Atmospheric Adminis-  
tration, and appropriated for  
Section 306b of the Coastal Zone  
Management Act of 1972.

GRANT #G0086036: ELEMENT I

1986

# SHAPIRO & ASSOCIATES<sup>PC</sup>

The Smith Tower  
Suite 1812  
506 Second Avenue

Seattle  
Washington 98104

206/624-9190

June 30, 1986

Ms. Ann Dold  
Island County Planning Department  
Island County Courthouse  
Coupeville, WA 98239

Dear Ann:

Shapiro and Associates, Inc. is pleased to present this recommended revision for the Island County Shoreline Master Program Ordinance. The recommendations presented here represent the efforts of Leslie Nellerhoe to incorporate the concepts of the Island County Zoning Ordinance into the Master Program. We trust you will find these recommendations reflect the needs and desires of the County.

We are also including two memos describing the results of preliminary inventories of wetland habitats on both Whidbey and Camano Islands. Given the constraints, we were unable to conduct a comprehensive inventory of all wetlands under shoreline jurisdiction, nor were we able to prepare detailed mapping of each. You will find, however, that the descriptions presented provide a good summary of the habitats and systems present in Island County. In particular, you will find general descriptions of marine, estuarine and palustrine systems in the County in the memo from Ron Kranz. These descriptions could be used to expand the discussion of marshes, bogs and swamps in the Master Program.

With regard to our discussions of habitat value, I think I have mentioned several times my concern about using native and non-native species as a criterion. While in general non-native species may be indicative of less disturbance, and may be more valuable to the overall ecosystem, there are enough exceptions to make that a somewhat tenuous justification for determination of habitat value. For example, recent research shows that wildlife use of spirea stands is limited, while yellow iris provides both feeding and breeding for a wide variety of waterfowl and wildlife.

My personal bias is for habitat values to emphasize diversity, both diversity within habitat types and between habitat types. The criteria developed by King County reflect this concern. In contrast with King County, however, I don't feel that open water, or any other single habitat type, should be given a priority in determining habitat value. Size is also an important characteristic influencing habitat value. A ten-acre wetland probably supports more than twice as many animals as a five-acre habitat, and certainly supports a greater variety.

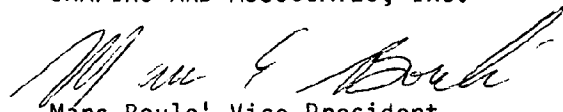
Ms. Ann Dold  
June 30, 1986  
Page Two

With these concerns in mind, I would be interested in discussing with you the specifics of how to develop criteria which best respond to the County's needs and desires.

We have found the opportunity to work on this project both rewarding and challenging. If you have any questions concerning this submittal, please do not hesitate to call.

Sincerely,

SHAPIRO AND ASSOCIATES, INC.

  
Marc Boule', Vice President  
Biological/Physical Resources

MEB:ble  
Enclosures



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June 30, 1986

Ann Dold  
Island County Planning Department  
Coupeville, Washington 98239

Re: Proposed Revisions to Island County Shoreline  
Controls Ordinance.

Dear Ann:

Enclosed is a draft proposed ordinance. I hope it incorporates all of the revisions you and I discussed, as well as those you discussed with Marc Boule. Several items are noteworthy.

As you will see, the provisions regarding buffers/setbacks are incorporated by reference to chapter 17.02 of the Island County Code. Basically, that allows the Planning Department to treat all marshes, bogs, swamps and lakes under twenty acres in the same way it treats upland wetlands. After looking at your jurisdictional concern, I determined that this approach was least likely to raise concerns with the County's residents and with DOE. Island County can, in fact, extend its jurisdiction over lands connected with streams that are located more than 200 feet from the ordinary high water mark. The mechanism to be used is adoption of a 100-year floodplain map. That procedure is authorized by WAC 173-22-040(3)(b). It does not appear feasible to include an extension of jurisdiction in this ordinance. To do so would be to create a system that would be difficult to administer. If the County chooses to include more of the 100-year floodplain within shoreline jurisdiction, the procedure of ch. 173-19 WAC must be followed.

Second, with regard to transfers of development rights, this draft includes them by reference to the zoning ordinance. However, it will be necessary to amend the zoning ordinance, ICC 17.02.170 by deleting the language that excludes shoreline wetlands from the TDR program.

Ann Dold  
June 30, 1986  
Page 2

Third, I have carefully reviewed the WAC revisions adopted by DOE that are effective June 22, 1986. I think I've incorporated all of the changes, however, I may have missed something. Please read the new regulations carefully when you review this draft.

Fourth, in terms of format, I made the following choices:

1. All sections not affected are not retyped.
2. New sections are dented by the introductory phrase "NEW SECTION." They are not underlined.
3. Amended sections are identified by an introductory sentence. The amendments are identified by double parentheses and striking out for deletions.
4. Additions are underlined.
5. Sections totally repealed are so indicated.

Fifth, if this proposal goes further, you should carefully review the DOE staff concerns identified when the Master Program was originally adopted. This is an ideal time for the Planning Department to address those concerns. Some of them will require policy decisions. Others can be classified as simple housekeeping changes. There are other areas in which policy decisions should be made as well. Foremost among those is the continued use of the unique/outstanding or valuable wetland (marsh, bog or swamp). This issue has two parts: (1) continued use of this categorization; and (2) the specific criteria used to categorize a particular parcel. Others were brought to your attention in your meeting with Marc Boule last week.

Sixth, I will meet with Bert Garrison in the next week or so. He called and asked whether I would meet with him to discuss his concerns about the proposed ordinance. I will, of course, let you know the outcome of that meeting. If nothing else, it may highlight potential problems.

Finally, please feel free to call me should you have additional questions after you review this draft. I look forward

Ann Dold  
June 30, 1986  
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to meeting with you to review the draft. This has been a fun project. I have enjoyed meeting you and look forward to working with you again.

Very truly yours,

SYRDAL, DANELO, KLEIN,  
MYRE & WOODS, P.S.



Leslie C. Nellermoe

LCN:sll

cc: Marc Boule

Enclosure

NEW SECTION

There is added to the Island County Shoreline Management Master Program a new section to read as follows:

Unless the context clearly requires otherwise, all terms in this Master Program shall have the meanings given in Island County Code §16.21.020.

Island County Code Section 16.21.020 is amended to read as follows:

16.21.020 DEFINITIONS

Words used in this Ordinance, unless the context clearly otherwise implies, shall assume the definitions contained in RCW 90.58 as now or hereafter amended, and such guidelines as have been, or may be adopted pursuant to RCW 90.58.

(A) TENSE AND NUMBER: When not inconsistent with the context, words used in the present tense shall include the future, the singular shall include the plural, and the plural the singular.

(B) INTERPRETATION:

1. The word "shall" is mandatory.
2. The word "may" is permissive.

~~((C) PRIMARY-USES:--Those uses which are deemed preferable and in keeping with the definition and policy of a particular shoreline designation.))~~

(C) DEFINITIONS:

For purposes of this ordinance, certain words and terms

shall have the following meanings unless the context clearly requires another meaning:

1. Accretion Terminal: Any shoreline feature created by the long term deposition of sand or other sediments carried by littoral drift or stream current processes via a driftway from a feeder bluff or other material source. Such shoreforms include barrier beaches, points, spits, tombolos, pocket beaches, and point and channel bars on streams.

2. Act: The Shoreline Management Act of 1971, chapter 286, laws of 1971 et. seq., chapter 90.58 of the Revised Code of Washington.

3. Active Recreation: In contrast with passive recreation these are activities that actually or potentially consume a resource such as hunting or fishing or which requires the construction of a facility, for example, a swimming pool.

4. Administrator: As used in the Master Program, Administrator means the Island County Planning Director or his designated representative.

5. Alteration of a Wetland: In any wetland or its required buffer: the placement or erection of any solid material

or structure; discharge or disposal of any dredged material, waste or fill; grading, removing, dredging, mining or extraction of any materials; the removal or harvesting of trees or other vegetation; or modification for use as an on-site storm water retention/detention facility.

6. Anchorage: A designated location where vessels or water craft may anchor or moor.

7. Aquaculture: The culture or farming of food fish, shellfish, or other marine or aquatic animals or plants, including commercial harvesting of clams and geoducks. (ICC 16.21.055A)

8. Aquatic Environment: An area consisting of the water's surface, the water column and all underlying lands and adjacent marshes, bogs, and swamps of all marine waters, all lakes and all streams within the county, including but not limited to bays, straits, harbor areas, waterways, tidelands, beds, shorelands seaward of the ordinary high water mark, and marshes, bogs and swamps.

9. Associated Wetlands: All marshes, bogs, swamps and river deltas associated with the streams, lakes and tidal waters which are subject to the provisions of this Chapter.

10. Average Grade Level: The average of the natural or existing topography of the portion of the lot, parcel or tract of real property that will be directly under the proposed building or structure; PROVIDED, That in the case of structures to be built over water, average grade level shall be the elevation of ordinary high water.

Calculations of average grade level shall be made by averaging the elevations at the center of all exterior walls of a proposed building or structure.

11. Backshore: The area on marine shores located above the ordinary high water mark or high tide level except during storms and unusually high tides. It is normally composed of deposited sand and/or gravel materials and includes all marshes or meadows that may form behind such a berm of material.

12. Bar: An offshore submergent or emergent ridge or mound of sand, gravel or other unconsolidated material built up by waters or currents on the bed at a stream, sea or lake, especially at the mouth of a stream or estuary.

13. Barrier Beach: A linear berm shoreform of sands and gravel or other unconsolidated material that extends generally parallel to the general coastal trend and is accreted seaward of bluffs, bays, marshes or estuaries by littoral drift;



the berm acts as a natural dike and seawall to its backshore or marsh hinterland.

14. Beach Feeding Procedure: An artificial process in which selected beach material is deposited at one or several locations in the updrift portion of the drift sector serving to nourish down drift beaches by littoral currents. The material is then naturally transported by waves or currents downdrift to stabilize or restore accretion beaches and berms that may be eroding due to artificial obstructions in the shore process corridor.

15. Beds or Bedlands: Those submerged lands below the line of extreme low tide in marine waters and below the line of navigability or navigable lakes and rivers.

16. Benthic Species: The collection of all bottom-dwelling organisms including both those which live on and in the substrate, those that are fixed and those that are mobile.

17. Berm: One or several linear deposits of sand and gravel generally paralleling the shore at or landward of ordinary high water mark; berms are naturally stable because of material size or vegetation.

current and wave action; they may also be built to retain uplands and fills that are prone to sliding, mass movement or erosion.

23. Burden of Proof: The obligation to prove one's position by a preponderance of evidence.

24. Channelization: The straightening, deepening or realigning of stream channels and/or the prevention of natural meander progression of streamways, through artificial means such as relocation of channels, dredging, and/or placement of continuous levees or bank revetments along significant portions of the stream. Dredging of sediment or debris alone is excluded.

25. Circulation Systems:

26. Compatible Uses: Uses that exist harmoniously together; are in agreement; are congruous.

27. Comprehensive Plan: A plan adopted by the County that maps varying intensities of allowed uses based on existing development patterns, biophysical limitations and capabilities of an area, and the goals and aspirations of the County's residents.

28. Conditional Designation: A shoreline designation assigned to a particular area when any of the following conditions are present: (a) actual annual flooding; (b) 100-year

flood potential; (c) rapid erosion; (d) soils with rapid percolation in areas of high water table; (e) soils with limited percolation that creates surface, subsurface, and potable water contamination hazards; (f) a slope or bluff that will not support lot development because of its physical characteristics; (g) street inadequacies (streets too narrow or too steep to allow adequate fire protection or sanitation services); (h) areas with substandard usable lot size.

A conditional designation requires extra care to be exercised in the area during and after development.

29. Conditional Use: A use or development that is either (1) classified as a conditional use or is not classified within the Master Program or this ordinance, and (a) the value of development exceeds two thousand five hundred dollars in total cost or fair market value; or (b) materially interferes with the normal public use of the water or shorelines of the state; and (c) is permitted only with a conditional use permit.

30. Conservancy Environment: An area in which natural resources and valuable historic and cultural areas are protected, conserved and managed to provide a continuous flow of recreational benefits to the public and to achieve sustained resource utilization.

31. Conservation Controls:

32. Constricted Migration Route: That portion of the migration route of any species which has been narrowed by either natural or man made constraints so as to potentially interfere with the successful migration of that species. Such constrictions may include culverts, gates or debris blockages on streams which may restrict salmon migration or unique feeding areas used by migrating species.

33. Development: A use consisting of the construction or exterior alteration of structures; dredging; drilling; dumping; filling; removal of any sand, gravel or minerals; bulkheading; driving of piling, placing of obstructions; or any project of a permanent or temporary nature which interferes with the normal public use of the surface of the waters overlying lands subject to the Act at any state of water level.

34. Dike: Man-made embankments or revetments normally set back from the riverbank or channel in the flood plain for the purpose of keeping flood waters from inundating adjacent land.

35. Dredging: The removal or displacement of earth such as gravel, sand, mud, or silt and/or other materials or debris from any stream, river, lake or marine water body and associated shorelines and wetlands.

36. Drift Sector: A particular reach of marine shore in which littoral drift may occur without significant interruption, and which contains any and all natural sources of such drift, and also any accretion shoreform(s) accreted by such drift. Each normal drift sector contains these shore process elements: feeder bluff or estuary, driftway, littoral drift, and accretion shoreform.

37. Driftway: That portion of the marine shore process corridor, primarily the upper foreshore, through which sand and gravel are transported by littoral drift. The driftway is the essential component between the feeder bluff(s) and accretion shoreform(s) of an integral drift sector. Driftways are also characterized by intermittent, narrow berm beaches.

38. Easement: An interest in land owned by another that entitles its holder to a specific limited use or enjoyment.

39. Ecotone: A transition zone or edge between two different habitats or ecosystems.

40. Endangered Species: Any species of fish or wildlife or plants which is in danger of extinction throughout all or a significant portion of its range as defined in the Endangered Species Act, 16 U.S.C. §1531 et seq.

41. Environment/Environment Designation: A categorical description of shoreline areas based on evaluation of the existing development pattern, the biophysical capabilities and limitations of the shoreline, and the goals and aspirations of the County citizenry.

42. Environmental Impact Statement: A document in which the significant environmental impacts of an action are discussed along with reasonable alternatives including mitigation measures, that would avoid or minimize adverse impacts or enhance environmental quality.

43. Environmentally Sensitive: An area designated by the County in which certain exemptions from the applicability of the State Environmental Policy Act could have a substantial adverse environmental impact. Environmentally sensitive areas include, but are not limited to areas with unstable soils, steep slopes, unusual or unique plants or animals, wetlands, or areas which lie within flood plains. See Washington Administrative Code Section 197-11-908.

44. Estuarine Channels: Shallow channels, primarily in the intertidal portion of an estuary, which function to distribute incoming flood tide waters and collect outgoing

ebb tide water to and from tidal flats and marshes. Some of these may also carry surface runoff from adjacent uplands.

45. Exemption: Those developments set forth in Washington Administrative Code (WAC) 173-14-040 that do not meet the definition of substantial development in RCW 90.58.030(3)(e).

46. Extreme Low Water: The lowest tide measured as predicted at any point. [Search for this in documents.]

47. Fair Market Value: The fair market value of a development is calculated using the expected price at which the development can be sold to a willing buyer. For developments that involve nonstructural activities such as dredging, drilling, dumping or filling, the fair market value includes the value of the deposited or extracted material, including the labor and equipment associated with project completion. (WAC 173-14-030)

48. First Class Tidelands: The lands lying within, or in front of, the corporate limits of any city or within one mile thereof upon either side and the inner harbor line where harbor lines have been established and within two miles of the corporate limits on either side and between the line of ordinary high tide and the line of extreme low tide. See Washington Administrative Code Section 332-30-106)

49. Floating Piers: Docking facilities which float upon the surface of the water and are stabilized by one or more pilings or anchors; as distinguished from those docks which are platforms attached or placed upon a system of pilings at a permanent elevation.

50. Flood Plain: Is synonymous with one hundred year flood plain and means that land area susceptible to being inundated by stream derived waters with a one percent chance of being equaled or exceeded in any given year. The limit of this area shall be based upon flood ordinance regulation maps or a reasonable method which meets the objectives of the Act. See Washington Administrative Code Section 173-22-030(2).

51. Floodway: Those portions of the area of a river valley lying streamward from the outer limits of a watercourse upon which flood waters are carried during periods of flooding that occur with reasonable regularity, although not necessarily annually, said floodway being identified, under normal conditions, by changes in soil conditions or changes in types or quality of vegetative ground cover condition. The floodway shall not include those lands that can reasonably be expected to be protected from flood waters by flood control devices maintained by or maintained under license from the federal government, the state, or a political subdivision of the state. The limit of the floodway is that which has been established in flood regulation



ordinance maps or by a reasonable method that meets the objectives of the Act. See Washington Administrative Code Section 173-22-030(3).

52. Forest Practices: Any activity conducted on or directly pertaining to forest land and relating to growing, harvesting or processing timber, including but not limited to: a) road and trail construction; b) harvesting, final and intermediate; c) pre-commercial thinning; d) reforestation; e) fertilization; f) prevention and suppression of diseases and insects. See Revised Code of Washington Section 76.09.020).

53. Gabion: Shore defense works made of rocks, rubble or masonry enclosed in wire mesh to form massive blocks to act as walls on beaches to prevent wave erosion, as foundations for jetties or breakwaters, or as stabilization for streambanks.

54. Groin: Wall-like structures built seaward from the shore. Their purpose is to build or preserve an accretion beach by trapping littoral sand drift on the updraft side.

55. Harbor of Refuge: A protected location where any vessel may seek refuge during dangerous weather conditions with no charge or limitation other than the safety of other vessels present.

56. Height: The distance between the average grade level and the highest point of a structure: PROVIDED, that television antennas, chimneys and similar appurtenances shall not be used in calculating height except where it obstructs the view of a substantial number of residents on areas adjoining such shorelines or the Master Program and this ordinance provide otherwise: PROVIDED FURTHER that temporary construction equipment is excluded from this calculation.

57. Hook: A curving cape or headland.  
(insert?)

58. Jetty: A structure built perpendicular to the shore extending through or past the intertidal zone; generally constructed at inlets to prevent sedimentation in the channel.

59. Lake: All surface waters of the state, including reservoirs, except lakes less than twenty acres in size; rivers and streams; shorelines of statewide significance.

60. Landfill: The creation, extension, or raising of land area by filling or depositing sand, soil, gravel, dredge spoils, or other materials into a shoreline, a wetland, or water body area. The disposal of solid waste shall not constitute landfill for purposes of this chapter or the Master Program.

61. Limnology: The scientific study of fresh waters, especially lakes and ponds.

62. Linear Access: Walkways or trails along the beach.

63. Marina: A facility that provides boat launching, storage, supplies, and services for boats.

64. Marshes, Bogs and Swamps: Marshes, bogs, and swamps are lands transitional between terrestrial and aquatic systems where saturation with water is the dominant factor determining plant and animal communities and soil development. They include lakes under twenty acres in size. For the purposes of this definition, these areas must have one or more of the following attributes:

(a) At least periodically, the land supports predominantly hydrophytes; or

(b) The substrate is predominantly undrained hydric soil; or

(c) The substrate is nonsoil and is saturated with water or covered by water at some time during the growing season of each year.

Hydrophytes include those plants capable of growing in water or on a substrate that is at least periodically deficient in oxygen as a result of excessive water content. Hydric soils include those soils which are wet long enough to periodically produce anaerobic conditions, thereby influencing the growth of plants. (new WAC 173-22-030)

65. Master Program: The comprehensive use plan for Island County Shorelines and the use regulations for the shorelines (Island County Code Ch. 16.021.005 et seq.) together with the maps, diagrams and charts that are appended to it.

66. Mean Higher High Tide: The average of the higher of the two high tides of each tide cycle as observed at a specific location through a complete tidal period of 18.6 years.

67. Mining: The removal of naturally occurring materials from the earth for economic use.

68. Multi-Purpose Trail System: A trail system designed to accommodate a variety of uses, such as pedestrians and equestrian.

69. Natural Accretion Shoreforms: Spits, bars, barrier beaches and other naturally occurring shoreline features

created by the deposition of wave- or current-transported sediment.

70. Natural Environment: An area relatively free of human influence, chiefly valued for its undisturbed natural features or processes.

71. Natural Shoreline Systems: A shoreline relatively free of human influence, which includes, but is not limited to, beaches and shores, estuaries, spits and bars, dunes, islands and marshes, bogs and swamps.

72. Net Long Shore Drift: The natural movement and direction of sediment along shorelines by wave action in response to prevailing winds or longshore currents.

73. Non-conforming Use: A use that was lawfully established and maintained but which, because of the enactment of this chapter, no longer conforms to the land use standards or use regulations of the zone in which it is located.

74. Open Space: Areas of a site designated and permanently committed as undisturbed areas or committed to passive community use.

75. Ordinary High Water Mark: "Ordinary high water mark" on all lakes, streams, and tidal water is that mark that will be found by examining the bed and banks and ascertaining where the presence and action of waters are so common and usual, and so long continued in all ordinary years, as to mark upon the soil a character distinct from that of the abutting upland, in respect to vegetation as that condition exists on June 1, 1971, as it may naturally change thereafter, or as it may change thereafter in accordance with permits issued by a local government or the department. The following criteria clarify this matter on tidal waters, lakes, and streams:

(a) Tidal waters:

(ii) In high energy environments where the action of waves or currents is sufficient to prevent vegetation establishment below mean higher high tide, the ordinary high water mark is coincident with the line of vegetation; where there is no vegetative cover for less than one hundred feet parallel to the shoreline, the ordinary high water mark is the average tidal elevation of the adjacent lines of vegetation, where the ordinary high water mark cannot be found, it is the elevation of mean higher high tide;

(iii) In low energy environments where the action of waves and currents is not sufficient to prevent vegetation establishment below mean higher high tide, the ordinary high water mark is coincident with the landward limit of salt tolerant vegetation. "Salt tolerant vegetation" means vegetation which is tolerant of interstitial soil salinities greater than or equal to 0.5 parts per thousand;

(b) Lakes, where the ordinary high water mark cannot be found, it shall be the line of mean high water;

(c) Streams, where the ordinary high water mark cannot be found, it shall be the line of mean high water. For braided streams, the ordinary high water mark is found on the banks forming the outer limits of the depression within which the braiding occurs.

76. Outdoor Advertising, Signs and Billboards: Publicly displayed messages on signs, billboards, placards or buildings, the purpose of which is to provide information, direction or advertising.

77. Outfall: The outlet of a sewage treatment plant, a commercial or industrial sewer, a storm sewer or a tide gate.

78. Overburden: Soil, rock or other materials that lie above a mineral deposit.

79. Passive Recreation: Recreational activities that do not consume the resource such as hiking, bird-watching and photography.

80. Percolation: The movement of water downward through soil.

81. Permit: Any substantial development, variance, or conditional use permit authorized under the Act and the Master Program, and this ordinance.

82. Performance Standards: Standards regulating development activities which are based on achieving a specific result, rather than providing a detailed description of the specific features of the development.

83. Port: Public or private facilities for transfer of cargo or passengers from water-born craft to land and vice versa; including but not limited to piers, wharves, sea islands, commercial float plane moorages, offshore loading or unloading buoys, ferry terminals, and required dredged waterways, moorage basins, and equipment for transferring cargo or passengers between land and water modes.



84. Primary Uses: Those uses that are deemed preferable and in keeping with the definition and policies for a particular shoreline designation.

85. Protected Species: Species of flora and fauna recognized by the federal government or the State of Washington as endangered, threatened or sensitive which are present in Island County and those species of flora and fauna which, while not necessarily endangered or threatened, are unique and worthy of protection. A list of protected species is included in Island County Code Chapter 17.02.

86. Residential Development: The development of land or the construction or erection of dwelling units for the purpose of residential occupancy.

87. Revetment: Sloped walls constructed of rip rap or other substantial material, placed on stream banks or marine shorelines to retard bank erosion from high velocity currents or waves respectively.

88. Rural Environment: An area characterized by intensive agricultural and recreational uses or an area with a high capability to support active agricultural practices; also

includes areas characterized by large residential lots, low intensity commercial or recreational uses.

89. Seawall: Structures more massive than a bulkhead or revetment, built for the purpose of protecting the shore and uplands from heavy wave action and incidentally, retaining uplands and fills.

90. Second Class Tidelands: The area outside of and more than two miles from the corporate limits of an incorporated city or town extending from the ordinary high tide line to the line of extreme low tide. (WAC 322-30-106)

91. Secondary Uses: Those uses that are not automatically deemed preferable because they are not necessarily in keeping with the definition and policy guidelines for uses in a particular shoreline designation.

92. Sediment: Solid material settled from suspension in a liquid.

93. Sedimentation: The process in which sediments are derived, the chemical and physical changes taking place, and the transport of sediment from the place of origin to those of deposition.

94. Selective Timber Cutting: Harvesting of no more than thirty percent of the merchantable timber in any ten year period of time.

95. Settling Ponds: Pond areas constructed to catch and hold storm water for a time to allow silt and sediment to settle out.

96. Shore: The common margin of dryland and a body of water; that space of land that is alternately covered and left dry by the rising and falling of the water level of a lake, river or tidal area.

97. Shore Defense Works: Structures or modifications designed to retard shore erosion from wave or current action, to protect channels and harbors from wave action, to encourage deposition of beach materials, to prevent shoreline erosion or to retain uplands.

98. Shoreline-Dependent Use: Any reasonable use that requires a water's edge or water surface location because of its intrinsic nature, including but not limited to navigation, ports, marinas, docks, piers, floats, boat fueling stations, ship yards, seafood harvest, aquaculture, recreational boating and swimming, and research and observation of natural shoreline phenomena.

Uses in this category are considered the most appropriate in terms of this program. See also Water-Dependent Use.

99. Shoreline Residential Environment: A shoreline area modified from its natural state by residential development more dense than is found in a rural environment.

100. Shorelines of State-wide Significance: Those shorelines described and listed in RCW 90.58.030(2)(e).

101. Silviculture Practices: Any activity conducted on, or directly pertaining to forestland and the related growing, harvesting or processing of timber.

102. Solid Waste: All putrescible solid and semi-solid wastes, including but not limited to garbage, rubbish, ashes, industrial wastes, swill, demolition and construction wastes, abandoned vehicles, or parts thereof, and discarded commodities.

103. Spit: A narrow point of land extending into a body of water.

104. Steep Slopes: Those lands in Island County that have a slope greater than 15 percent.

105. Stream: A naturally occurring body of periodic or continuously flowing water where: (a) the mean annual flow is greater than twenty cubic feet per second; and (b) the water is contained in a channel. A channel is an open conduit either naturally or artificially created. This definition does not include artificially created irrigation, return flow, or stockwatering channels. Washington Administrative Code Section 173-22-030(8).

106. Structure: A permanent or temporary edifice or building or any piece of work artificially built or composed of parts joined together in some definite manner, whether installed on, above, or below the surface of ground or water except vessels. Washington Administrative Code Section 173-14-030(15).

107. Substandard Usable Lot Size: A lot which is smaller than permitted by existing zoning but has an adequate size to be used for same activity and may legally be used since it was considered a suitable lot size at the time it was established.

108. Substantial Development: As defined in the Act, is any development of which the total cost or fair market value exceeds one thousand dollars, or any development which materially interferes with the normal public use of the water or shorelines

of the state except those activities listed in RCW 90.58.030(3)(c).

109. Surface Water Retention/Detention Facility: A pond or structure to retain or detain storm runoff waters to increase the time of concentration or reduce the maximum discharge rate of runoff.

110. Tidal Waters: Those marine and estuarine waters bounded by the ordinary high water mark. Where a stream enters the tidal water, the tidal water is bounded by the extension of the elevation of the marine ordinary high water mark within the stream.

111. Transition Type: See Ecotone.

112. Unstable Slopes: Those lands in Island County designated in the Department of Ecology Coastal Zone Atlas of Island County dated April, 1979 as having recent or historical slide activity and/or indicative of unstable slope conditions and those lands where supplemental information has indicated unstable slopes.

113. Uplands: Those shoreline areas landward of the ordinary high water mark except backshores, natural wetlands and flood plains.

114. Use: The purpose or activity for which land or any structure thereon is designed, arranged, occupied or maintained.

115. Urban Environment: An area of high density land use including residential, commercial and industrial development, including both areas presently subjected to extremely intensive use pressure and those areas into which urban expansion is planned.

116. Utilities: Services that produce or carry electric power, gas, sewage, water, petroleum products and communications.

117. Variance: A means of granting relief from specific bulk, dimensional or performance standards set forth in the Master Program, and this ordinance. It is not a means to vary a use of a shoreline.

118. Water Dependent Use: A use that cannot be logically located in any area other than shorelines. Water dependent uses include a) water-borne commerce and transfer, b) terminal and transfer facilities for waterborne commerce and industry; c) ship construction, repair and storage facilities, not including construction of private, non-commercial pleasure

craft; d) commercial fish facilities and services; e) marinas; f) aquaculture.

119. Water Table: The upper limit of the portion of the ground totally saturated with water.

120. Waterways: Rivers, canals, channels, culverts or other natural or human made features intended to convey surface water.

121. Wetlands: Those lands extending landward for two hundred feet in all directions as measured on a horizontal plane from the ordinary high water mark; floodways and contiguous flood plain areas landward for two hundred feet from such floodways and all bogs, marshes, swamps and river deltas associated with the streams, lakes and tidal waters which are subject to the Act and designated as to location by the Department of Ecology and such additional portions of 100 year flood plain as may be designated as wetlands by the Administrator. (WAC 173-22-030)

~~((D))--SECONDARY USES:--Those uses which are not automatically deemed preferable are not necessarily in keeping with the definition and policy of a particular shoreline designation.~~



(E)--CONDITIONAL USES:--Those uses which by their intensity of land use, size, height, bulk, and need for required public amenities and services, are deemed in keeping with the definitions and policy of a particular shoreline designation only when subject to specific condition and treatment.

(F)--ACT:--Shoreline Management Act of 1971, chapter 98.58 RCW.

(G)--EXTREME LOW TIDE:--The lowest line on the tidelands reached by a receding tide.

(H)--BOARD:--Board of Island County Commissioners.

(I)--MASTER PROGRAM:--The Comprehensive Shoreline Plan for Island County and the Use Requirements together with maps, diagrams, charts or other descriptive material and text.

(J)--FLOODPLAIN:--An area subject to periodic inundation due to surface water runoff or exceptionally high tides, or a combination of the two.

(K)--AQUACULTURE:--Farming of food fish, shellfish, or other aquatic plants or animals.

~~(L)--WATER-DEPENDENT-USES:--Uses which best serve the  
general public's need for commerce and navigation, and  
demonstrate an economic dependence for shoreline location.~~

~~(M)--ADMINISTRATOR:--Island County Planning Director.))~~

Island County Code Section 16.21.025 is amended to read as follows:

16.21.025 APPLICABILITY

(A) APPLICABILITY IN GENERAL: This Master Program shall apply to every person, individual, firm partnership, association, organization, corporation, local or state government agency, public or municipal corporation, or other nonfederal entity which develops, owns, leases, or administers lands, wetlands or waters subject to this Master Program.

(B) APPLICABILITY TO FEDERAL AGENCIES:

1. Federal agencies shall be required to obtain permits for substantial developments undertaken by the federal government on lands owned in fee by the Federal government  
~~((until such time as the Washington State~~

~~Shoreline-Program-is-approved-under-the  
Coastal-Zone-Management-Act,-16-USE-1451-et  
seq.-After-the-Washington-State-Shoreline  
Program-is-so-approved,-the-Federal  
government-shall-be-subject-to-the-State  
Shoreline-Program-as-provided-by-the-Coastal  
Zone-Management-Act-)~~ as required by the  
Coastal Zone Management Act, 16 U.S.C. §1451,  
et seq.

2. The requirements of this Ordinance shall apply to non-federal activities undertaken on lands subject to non-federal lease or easement, even though such lands may be under federal ownership.
3. ~~((The-Substantial-Development-Permit-system  
shall-apply-to-substantial-developments  
undertaken-on-lands-not-Federally-owned-by  
under-lease,-easement,-license,-or-other  
similar-Federal-property-rights-short-of-fee  
ownership,-to-the-Federal-government-))~~ A  
federal agency proposing a development that  
falls within the jurisdiction of the Act, the  
Master Program and this chapter on land that  
is not owned in full by the federal

government, must comply with the requirements of the Act, this ordinance and the Master Program.

(C) APPLICABILITY TO DEVELOPMENT

1. No substantial development shall be undertaken by any person on shorelines without first obtaining a shoreline substantial development permit from Island County; PROVIDED, that such a permit shall not be required for the classes of substantial development exempted from the shoreline permit requirement listed in (2) of this section; PROVIDED FURTHER, that A STATEMENT OF EXEMPTION as provided in subsection (5) of this section shall be obtained from the Administrator prior to beginning development if uncertainty exists regarding qualification for exemption.

2. The following shall not require substantial development permits.

(a) Any development of which the total cost or fair market value, whichever is

higher, does not exceed two thousand five hundred dollars, if such development does not materially interfere with the normal public use of the water or shorelines of the state: PROVIDED, exempt developments must comply with the policy and purposes of the Act, the Master Program and this ordinance.

(b) Normal maintenance or repair of existing structures or developments, including damage by accident, fire or elements. "Normal maintenance" includes those usual acts to prevent a decline, lapse, or cessation from a lawfully established condition. "Normal repair" means to restore a development to a state comparable to its original condition within a reasonable period after decay or partial destruction where repair involves total replacement which is not common practice or causes substantial adverse effects on the shoreline resource or environment.

(c) Construction of the normal protective bulkhead common to single-family residences. A "normal protective" bulkhead is constructed at or near the ordinary high water mark to protect a single family residence and is for protecting the land from erosion, not for the purpose of creating land. Where an existing bulkhead is being replaced, it shall be constructed no further waterward of the existing bulkhead than is necessary for construction of new footings.

(d) Emergency construction necessary to protect property from damage by the elements. An "emergency" is a unanticipated and imminent threat to public health, safety or the environment which requires immediate action within a time too short to allow full compliance with this ordinance and the Master Program.

(e) Construction and practices normal or necessary for farming, irrigation and

ranching activities, including  
agricultural service, roads and  
utilities on land within shoreline  
jurisdiction, construction of a barn or  
similar agricultural structure, and the  
construction and maintenance of  
irrigation structures including but not  
limited to head gates, pumping  
facilities, and irrigation channels:  
PROVIDED, That a feedlot of any size,  
all processing plants, other activities  
of a commercial nature, alteration of  
the contour of the wetlands by leveling  
or filling other than that which results  
from normal cultivation, shall not be  
considered normal or necessary farming  
or ranching activities. A "feedlot" is  
an enclosure or facility used or capable  
of being used for feeding livestock,  
hay, grain, silage, or other livestock  
feed, but shall not include land for  
growing crops or vegetation for  
livestock feeding and/or grazing, nor  
shall it include normal livestock  
wintering operations.

(f) Construction or modification of navigational aids such as channel markers and anchor buoys.

(g) Construction on wetlands by an owner, lessee or contract purchaser of a single-family residence for his own use or for the use of his family, which residence does not exceed a height of thirty-five feet above average grade level and which meets all requirements of the state agency or local government having jurisdiction thereof, other than requirements imposed pursuant to this chapter. "Single family residence" means a detached dwelling designed for and occupied by one family including those structures and developments within a contiguous ownership which are a normal appurtenance. An "appurtenance" is necessarily connected to the use and enjoyment of a single family residence and is located landward of the perimeter of a marsh, bog or swamp. Normal appurtenances include a garage, deck, driveway, utilities, and grading which



does not exceed two hundred fifty cubic yards (except to construct a conventional drain field.) Construction authorized under this exemption shall be located landward of the ordinary high water mark.

(h) Construction of a dock, designed for pleasure craft only, for the private noncommercial use of the owners, lessee, or contract purchaser of a single-family residence, for which the cost or fair market value, whichever is higher, does not exceed two thousand five hundred dollars.

(i) Operation, maintenance, or construction of canals, waterways, drains, reservoirs, or other facilities that now exist or are hereafter created or developed as a part of an irrigation system for the primary purpose of making use of system waters, including return flow and artificially stored ground water from the irrigation of lands.

(j) The marking of property lines or corners on state owned lands, when such marking does not significantly interfere with normal public use of the surface of the water.

(k) Operation and maintenance of any system of dikes, ditches, drains, or other facilities existing on the effective date of the 1975 amendatory act which were created, developed or utilized primarily as a part of an agricultural drainage or diking system.

(l) Any project with a certification from the governor pursuant to chapter 80.50 RCW.

(3) Exemptions shall be narrowly construed.

(4) Exemptions shall not be authorized by the Administrator unless they are consistent with the policies and provisions of the Act, the Master Program and this Chapter.

- (5) The Administrator shall prepare a letter to the applicant and the Department of Ecology exempting a project from the substantial development permit whenever a development falls into one of the exemptions of subsection (2) of this section and the development is subject to a U.S. Corps of Engineers section 10 permit under the Rivers and Harbors Act of 1899, or a section 404 permit under the Federal Water Pollution Control of 1972. The letter shall be in the form prescribed by Washington Administrative Code Section 173-14-115.

Island County Code Section 16.21.030 is amended to read as follows:

16.21.030 RELATIONSHIP TO OTHER LAND-USE REGULATIONS

(A) Use Requirements established by this Ordinance shall constitute combining districts to be enforced in conjunction with such zoning or land use control ordinances in effect or which may be adopted by Island County.

~~((When-conflicts-arise-between-standards-imposed~~

~~by this Ordinance and other applicable land use controls the more stringent shall apply))~~

(B) Obtaining a shoreline permit or statement of exemption for a development or use does not excuse the applicant from compliance with other local, regional state or federal laws applicable to such development or use.

(C) The Shorelines Management Act, the Master Program and this Ordinance comprise the basic state and local laws regulating use of shorelines in Island County. If the Act, this Master Program and this Ordinance conflict with other existing applicable state and county policies, regulations and ordinances for an affected area, the provisions of the Act, the Master Program and this ordinance shall prevail unless the existing state and county policies, regulations and ordinances are more restrictive.

16.21.035 PERMITTED USES - Not changed

16.21.045 SHORELINE USE REQUIREMENTS

Island County Code Section 16.21.045 is amended to read as follows:

(A) GENERAL: There are hereby created Use Requirements with which all shoreline developments and uses shall comply when located within the geographical jurisdiction of this ordinance, the Master Program and the Act.

(B) PURPOSE: The purpose of these Use Requirements is to implement:

1. The goals and policies of the Shoreline Management Act and this Master Program.
2. The definitions and policies of the Shoreline Designations and,
3. The economic, physical, and social framework within which shoreline development will occur.

(C) PERMITTED USES: In general, uses permitted in an environment shall be allowed in marshes, swamps and bogs and their buffers located within that environment by use approval unless exempted from the approval process by ICC §16.21.025(C)(2).

(D) CONDITIONAL USES:

1. In general, uses conditionally permitted in an environment shall be permitted on wetlands and their buffers located within that environment by use approval only. Approval shall be pursuant to Island County Code Sections 17.02.110(a), 17.02.150(n).

2. Any use of a wetland subject to the jurisdiction of the Act, the Master Program and this ordinance that alters a marsh, bog or swamp, or its buffer shall be permitted only when:

(a) Alteration is necessary in order to provide a reasonable buildable area for a single family residence or accessory building on a lot legally established prior to June, 1971; or will preserve, improve, or protect the functions of the wetland; and

(b) Alteration will comply with the development standards contained in part G of this section; and

(c) Use of the parcel will comply with all terms and conditions of this chapter and other pertinent requirements of the Island County Code and will be consistent with the goals and policies of the Act, and the Master Program; and

(d) The applicant irrevocably commits to restoration of the marsh, bog, swamp or its buffer should the alteration allowed in the conditional use permit not, in fact, preserve, improve or protect the functions of the marsh, bog or swamp or its buffer.

(E) DEVELOPMENT STANDARDS:

1. Setback Requirement. Buffers shall be established adjacent to all marshes, bogs and swamps, according to the provisions of Island County Code Section 17.02.110(a)(5).
2. Applicability: These standards apply to all applications for permits or other approvals unless they are modified by Island County through the variance procedure upon

determination that the proposed alteration would preserve, improve or protect the wildlife habitat, natural drainage and/or other natural functions of the wetland and would be consistent with the purposes of this Chapter and the Master Program. This determination may be made upon review of a study completed by a biologist, plant ecologist, or similarly qualified professional. The study shall be prepared at the applicant's cost and submitted to the County.

3. Water Quantity and Quality: Uses permitted adjacent to marsh, bog or swamp shall control stormwater runoff and protect the natural movement of water according to the following provisions:

(a) General Provisions. The following provisions apply to all marshes, bogs and swamps:

(1) Marshes, bogs and swamps shall be protected from sedimentation by the



use of settling ponds or other  
stormwater management practices  
approved by the Island County  
Engineer.

(2) The best available treatment  
practices shall be used to remove  
toxic wastes, petrochemicals or  
other pollutants from stormwater  
before it enters any marshes, bogs  
and swamps.

(3) The flow rate and velocity of  
stormwater runoff entering marshes,  
bogs and swamps shall be limited to  
pre-development levels.

(4) Where possible, natural water level  
fluctuations in marshes, bogs and  
swamps shall be minimized during  
spring breeding season (April  
through June).

(b) Unique/Outstanding Wetlands: In  
marshes, bogs and swamps rated  
Unique/Outstanding according to the

criteria of Island County Code Section 17.02.110(4), the following provisions shall apply:

(1) Unique/Outstanding marshes, bogs and swamps shall not be used as artificial on-site stormwater retention/detention sites.

(2) In marshes, bogs and swamps with no natural point of inflow (i.e., stream), any surface water directed toward the marsh, bog or swamp shall filter through the water table or a drain field to avoid erosion and excess nutrient inflow.

(3) All surface water directed into marshes, bogs and swamps shall be passed through a settling pond or other stormwater management practice approved by the Island County Engineer in order to remove sediments and pollutants.

(c) Valuable Marshes, Swamps and Bogs:  
Valuable marshes, bogs and swamps  
designated under the criteria of Island  
County Code Section 17.02.110(a)(4)  
shall not be used as artificial on-site  
stormwater retention/detention sites.

(4) Human Access. The following provisions shall  
apply to controlling human access and  
encouraging appropriate use in marshes,  
swamps and bogs:

(a) No motorized vehicles shall be allowed  
within a marsh, swamp or bog or its  
buffer;

(b) Any trails within a marsh, swamp or bog  
shall be constructed with minimum  
disruption to habitat;

(c) Distinct edges, barriers, signs or other  
measures shall be provided in order to  
keep visitors on designated trails.  
Signs shall not mention a protected  
species, if any.

(d) Corridors: Where possible, marshes, bogs or swamps should be connected to streams, to other marshes, bogs or swamps or to undeveloped areas such as forests or Puget Sound by undisturbed corridors.

(F) SEPA COMPLIANCE

Marshes, bogs and swamps are hereby declared to be "environmentally sensitive areas" pursuant to WAC 197-11-748 and 197-11-908.

(G) DESIGNATION CRITERIA

In the event that any of the wetland designations shown on the Island County wetland map conflicts with the criteria set out in chapter 173-22 Washington Administrative Code, the criteria shall prevail. Designated wetland area boundaries shall be determined using the criteria in WAC 173-22-040.

(H) TRANSFER OF DEVELOPMENT RIGHTS

The transfer of development rights program included in Island County Code Section 17.02.170 is applicable to

marshes, bogs and swamps associated with tidal waters, lakes and streams which are subject to the Act, the Master Program and this ordinance.

No changes are made in §§16.21.050-16.21.130.

Island County Code Section 16.21.135 is hereby repealed.

NEW SECTION. A new section, Island County Code Section 16.21.136 is added to read as follows:

16.21.136 ADMINISTRATION

(A) PLANNING DEPARTMENT

1. The Island County Planning Director or his designee, "the Administrator," is hereby vested with:

- (a) Overall administrative responsibility for the Master Program.
- (b) Authority to grant or deny statements or exemption from the requirement to obtain a substantial development permit as

described in Section 16.21.045 and WAC  
173-14-115.

(c) Authority to determine compliance with  
RCW 43.21C, the State Environmental  
Policy Act.

(d) Authority to seek remedies for  
violations of the Act, the Master  
Program, this ordinance or for  
noncompliance with conditions of any  
substantial development permit issued by  
the County.

2. The duties and responsibilities of the  
Administrator shall include:

(a) Establishing the procedures and  
preparing forms deemed essential for the  
administration of this program;

(b) Advising interested citizens and  
applicants of the policies, regulations  
and procedures of this program;

- (c) Making administrative decisions and interpretations of the principles and policies of this ordinance, the Master Program and the Act;
- (d) Collecting fees pursuant to Island County Code §16.21.130J.
- (e) Determining whether applications and all necessary data are complete and in the proper form prior to review;
- (f) Making field inspections as necessary;
- (g) Reviewing, insofar as possible, all provided and related data deemed necessary for appropriate application needs;
- (h) Submitting substantial development permit applications to and making written recommendations and findings on such permits to the Island County Planning Commission for their review and recommendations. The Administrator shall, insofar as possible, insure that

all pertinent data, correspondence and information regarding a permit are made available to the Planning Commission;

- (i) Providing technical and administrative assistance to the Planning Commission and the Board of Island County Commissioners as required for effective and equitable implementation of this ordinance, the Program and the Act;
- (j) Assuring that proper notice is given to appropriate persons and the public of all hearings;
- (k) Approving proposed revisions to a substantial development, conditional use or variance permit, if the proposed changes are within the scope and intent of the original permit as described in Section 16.21.137B, C;
- (l) Informing the citizens of Island County of the philosophy, purposes, goals, requirements, implications and technical



considerations associated with the Act,  
this ordinance and the Master Program;

- (m) Investigating, developing and proposed amendments to this ordinance and the Program as deemed necessary to achieve their goals and purposes more effectively and equitably.

B. SHORELINES HEARINGS BOARD

1. The Island County Planning Commission "the Commission" shall serve as the Shorelines Hearings Board.
2. The Commission is hereby vested with:
  - (a) Authority to establish and maintain bylaws and rules of procedure prescribing the conduct of meetings and public hearings;
  - (b) Authority to hear, review and pass consideration on substantial development permit application and any variance or conditional use terms or standards

attached thereto before public meetings  
and/or hearings pursuant to Island  
County Code Section \_\_\_\_\_.

- (c) Responsibility for making findings and  
proposing and/or reviewing,  
recommendations to the Board of County  
Commissioners for either granting or  
denying substantial development permit  
applications and variance or conditional  
use terms or standards.

C. BOARD OF COUNTY COMMISSIONERS

- 1. The Board of Island County Commissioners,  
"the Board" is hereby vested with:

- (a) Authority to grant or deny substantial  
development permits after considering  
the findings and recommendations of the  
Commission and the advice of the  
Administrator; PROVIDED that any  
decisions in this matter made by the  
Board may be further appealed to the  
State Shoreline Hearings Board as  
provided in the Act; and

(b) Authority to decide appeals of the Administrator's actions and interpretations.

2. The duties and responsibilities of the Board shall include:

(a) Scheduling regular meeting days or, if necessary, public hearings in order to consider substantial development permit applications and appeals of the Administrator's actions and interpretations;

(b) Reviewing the findings and recommendations for permit applications or appeals of the Administrator's actions on regular meeting days or at public hearings;

(c) Making findings and granting or denying substantial development, variance and conditional use permits in accordance with the procedures of Island County Code §16.21.137;

(d) Seeking remedies for alleged violations of the Master Program, the provisions of the Act, or the provisions of this ordinance or of the conditions of any approved substantial development, variance or conditional use permit issued by Island County.

D. BUILDING OFFICIAL

1. The Island County Building Official shall have the authority and responsibility to insure that all building permits and conditions attached thereto which are subject to the Act or the provisions of the Master Program, as determined by the Administrator, are being fully complied with by the applicant.
2. The County Building Official shall not issue a Building Permit for development subject to the substantial development permit process until such a permit has been granted by local government and approved by the state.

3. In the case of a development subject to the policies and regulations of this Master Program but exempt from the shoreline permit process, the Building Officer, through consultation and coordination with the Administrator, shall attach shoreline management terms and conditions to the Building Permit and insure their compliance.

There is added to the Island County Code a new section to read as follows:

16.21.137 PERMIT PROCEDURES

A. Substantial Development Permit Applications:

1. Any person wishing to undertake substantial development on shorelines shall apply to the Administrator for a Substantial Development Permit.
2. (a) Any person wishing to undertake development on shorelines where such development is deemed by the applicant and/or Administrator to be uncertain regarding qualification for permit

exemption, shall obtain a statement of exemption from the Administrator.

- (b) No landfill, dredging, shoreline stabilization and flood protection work, or shore defense work other than emergency work shall commence until a statement of exemption has been obtained.

3. An applicant shall have the following responsibilities when applying for a substantial development permit:

- (a) An applicant for a permit for a development that is considered a primary use within a designation need not demonstrate the appropriateness of a primary use; PROVIDED, any development that is a primary use must comply with the use requirements specified in this ordinance for the particular type of development in question and must be consistent with the goals and policies of the Act and the Master Program.

(b) An applicant for a development categorized as a secondary use must demonstrate that:

- (i) The proposed use will not be contrary to the general intent, purposes, goals, or policies of Island County's Master Program;
- (ii) The use will not be contrary to the definition and policies expressed for the particular shoreline designation within which it is located;
- (iii) The use will not unduly interfere with public use of publicly-owned land or private use of adjacent private land;
- (iv) The use will cause no unnecessary adverse effects on the environment or impact other uses; location, design, construction, and operation of the proposed use shall comply with the use requirements specified

in Chapter 17.20 for that type of development;

- (v) The proposed development is consistent with the policies and provisions of the Act and the Master Program.

B. Conditional Use Permit Applications:

1. Purpose. In order to insure that strict implementation of the Master Program and Island County Code Chapter 16.21 will not create unnecessary hardship, and to provide more control and flexibility in implementation of this chapter, provisions for Conditional Uses are here included. These provisions shall apply only when it can be shown that extraordinary circumstances exist and that the public interest would suffer no substantial detrimental effect, that the proposed use will be compatible with the permitted uses within the same area.
2. Procedure. An applicant for a conditional use permit shall apply for it at the same



time as application is made for a substantial development permit. The two applications shall be treated as one for all purposes including public notice of the applications.

3. Board's Authority. The Board is hereby authorized to grant or deny conditional use applications in connection with shoreline substantial development permit applications for:
  - (a) Substantial developments that are permitted under this chapter in a particular shoreline designation only as a conditional use;
  - (b) [Non-conforming use - do you want something different than WAC 173-14-055?]
  - (c) Repair or restoration of a non-conforming use or structure (see ICC §16.21.\_\_\_\_).

4. Decision Criteria. The Board shall grant a conditional use permit only when all of the criteria below are demonstrated by the applicant:

- (a) The proposed use or development meets all applicable regulations and performance standards contained in this chapter and the Program and is compatible with permitted uses in the particular Shoreline area in which it is proposed;
- (b) The use or development will not cause unreasonably adverse impacts on shoreline features or environmental quality;
- (c) The use or development will not unnecessarily nor substantially interfere with the lawful public use of public shorelines;
- (d) The visual appearance of the development will be compatible with adjoining shoreline features and the policies

underlying the Shoreline area  
designation; and

- (e) The use or development will be  
consistent with the general intent of  
this chapter and the Program.

C. VARIANCE APPLICATIONS

1. Purpose. To provide relief from specific  
bulk, dimensional or performance standards in  
this chapter and the Program; to avoid  
practical difficulties and undue hardship for  
an applicant. An applicant must demonstrate  
that there will be no reasonable use for the  
subject property unless a variance is  
granted.
2. Procedure. An applicant for a variance shall  
apply for it at the same time as application  
is made for a substantial development permit.  
The two applications shall be treated as one  
for all purposes including public notice of  
the application.

3. Board's Authority. The Board is hereby authorized to grant or deny variance applications in connection with applications for shoreline substantial development permits.

4. Decision Criteria. Variances may be granted when all of the following criteria are demonstrated by the applicant:

(a) The hardship which serves as basis for granting of variance is especially related to the property of the applicant; and

(b) The loss of reasonable use is primarily due to this program's regulations, and not to deed restrictions, covenants, the owner's previous actions, nor other factors not directly related to this program; and

(c) The variance, if granted, will be in general harmony with the purpose and intent of the Act, the Program and this chapter; and

(d) The public health, safety and welfare will be preserved; if more harm will be done to shoreline features, resources, and/or appropriate and legitimate uses in the vicinity by granting the variance than would be done to the owner's interests by denying it, the variance shall be denied.

D. PROCESSING APPLICATIONS

1. Public Notice. Following acceptance of the application, the Administrator shall cause public notices of the application to be published in a newspaper of general circulation in the County once a week on the same day of the week for two weeks. Publication costs shall be borne by the application.
2. Information Collection. Beginning on the date of the last published notice, a 30-day review period will commence, during which time the Administrator shall collect relevant data, except communications from persons and

agencies wishing to express views on the application.

3. Planning Commission Hearing. Following the thirty (30) day review period, and provided the applicant has submitted all information on the agenda of the next regular meeting of the Island County Planning Commission.

4. Action by Board of Commissioners. The Planning Commission shall forward its recommendations along with Findings of Fact to the Board of County Commissioners, who may either concur in their recommendation or schedule a hearing before the Board.

D. NOTICE TO DEPARTMENT OF ECOLOGY, ATTORNEY GENERAL

Any ruling by local government on an application for a substantial development, conditional use or variance permit, whether it be an approval or denial, shall be filed with the Department of Ecology and the Attorney General.

1. The Administrator shall file copies of the original application, affidavit of public notice, site plan, vicinity map and the

Board's final order with the Department of Ecology and the Attorney General within eight days of the Board's final decision.

2. When applicable, the Administrator shall also file the following materials required by chapter 43.21C RCW, the State Environmental Policy Act; environmental checklist, threshold determination, and environmental impact statement, or in lieu thereof, a statement summarizing the actions and dates of such actions taken pursuant to chapter 43.21C RCW.

#### E. PERMIT TERMINATION

Any permit authorizing construction or operations (activities where the principal activity consists of ongoing modifications to the environment including, but not limited to, dredging, drilling, dumping, filling and removal of any sand, gravel or minerals) shall include a date by which construction or operations must terminate.

1. Duration. Unless a shorter time is specified, the termination date shall be two

years from the date on which the Board issued the permit.

2. Substantial Progress. Construction and operations need not terminate in two years if substantial progress towards construction is undertaken on operations have begun but are not completed within two years. Substantial progress toward construction includes, but is not limited to making contracts, completion of grading and excavation, signing a notice to proceed, and laying of major utilities.
3. Extension. The Board may, in its discretion, and after notice to affected parties, extend the date for termination for a reasonable period of time based on the applicant's inability to expeditiously obtain other required government permits.



#### E. REVISIONS TO PERMITS

An applicant seeking to revise a permit must submit detailed plans and a description of the proposed changes. If the Administrator determines that the proposed changes are within the scope and intent of the original permit, the revision may be approved.

1. Decision Criteria. No revision shall be approved unless the following conditions are all met:
  - (a) No additional over water construction is involved except that pier, dock, or float construction may be increased by five hundred square feet or ten percent from the provisions of the original permit, whichever is less;
  - (b) Ground area coverage and height of each structure may be increased a maximum of ten percent from the provisions of the original permit;
  - (c) Additional separate structures may not exceed two hundred fifty square feet;

- (d) The revised permit does not exceed height, lot coverage, setback, buffer, or an other requirements of the Program, this chapter except as authorized in the original permit;
- (e) Additional landscaping is consistent with conditions (if any) attached to the original permit and this chapter and the Program;
- (f) The use authorized pursuant to the original permit is not changed; and
- (g) No substantial adverse environmental impact will be cause by the project revision.

2. New Application. If the sum of the proposed revision and any previously approved revisions violate the provisions of subsection (1) above, a new application for the project shall be required.

3. Notice to Department of Ecology. Notice of the final decision on any proposed revision shall be filed with the Department of Ecology and the Attorney General within eight days of the final action.
4. Notice to Parties. The Administrator shall notify the parties of record of their action.
5. Department of Ecology Approval. If the permit for which the revision is requested involves a conditional use or variance that was conditioned by the Department of Ecology, the Administrator shall submit the proposed revision to the Department of Ecology for approval, approval with conditions, or denial pursuant to WAC 173-14-064.

G. BONDS

To guarantee that conditions imposed in conjunction with permit approval are completed, a bond may be required of the applicant in an amount satisfactory to the County Hearing Board. Any such bond shall be from a reputable lending agency and in a form acceptable to the Island County Prosecuting Attorney.

I. APPEALS

1. Appeal to the Board. Any person aggrieved by the Board's decision on an application may appeal the decision to the Board by filing a notice with the Board within forty-five days of the transmission of the final order to the Department of Ecology. The appeal shall be handled (fill in Island County's usual appeal procedures here)

2. Appeal to the State Shoreline Hearings Board. Any person aggrieved by the granting, denying, or rescinding of a Shoreline Development Permit may seek review by filing a request for review with the Shorelines Hearings Board, the Department of Ecology,

and the Attorney General within thirty (30) days of receipt of the final order.

3. Effect of Appeals. Should there be no appeal of the decision and all necessary permits have been granted, the project may proceed. Should there be an appeal, the project applied for may not begin until all appeals have been adjudicated as provided by law. Construction undertaken during or before the expiration of the appeals deadline is undertaken at the applicant's risk.

#### J. FEES

A fee shall be paid to the Planning Department at the time an application is submitted to cover the cost of administration, according to the following schedule:

<u>Cost or Market Value of Proposed Project</u>	<u>Fee</u>
\$ 1,000 - \$10,000	\$ 25
\$10,000 - \$50,000	\$ 50
\$50,000+	\$100
Variance	\$ 50
Conditional Use Permit	\$ 50

NEW SECTION. There is added to the Island County Code a new section to read as follows:

16.21.138 NOTIFICATION OF DEVELOPMENT

Any development or activity to be undertaken within the designated shoreline areas of Island County shall be reported to the Administrator at least two (2) weeks prior to the anticipated starting date. notification shall be in writing and shall include:

1. The name of the person or persons intending to perform the subject development or activity;
2. The name of the property owner;
3. The nature of the proposed development or activity;
4. The location of the property, and the anticipated starting and ending dates of the project.

Island County Code Section 16.21.140 VIOLATIONS AND PENALTIES is amended to read as follows:

A. ((CIVIL-ACTIONS)) REVOCATION

The Administrator may revoke any permit or halt project construction, if conditions of a Substantial Development Permit are not fulfilled or are violated or if other use requirements are violated. Revocation by the Administrator shall be in the form of a "cease and desist" order, served by the Administrator or a duly appointed representative. The Administrator may, if it is deemed necessary, require that additional conditions be imposed on a Shoreline Management Substantial Development Permit Application to insure compliance with the Shoreline Management Act and Island County's Master Program.

B. CIVIL ACTIONS

The Attorney General, or the Prosecuting Attorney for Island County may bring such injunctive, declaratory, or other action as is necessary to insure that no uses are made of the shorelines of the state in conflict with the provisions of the Shoreline Management Act of 1971 or Island County's Master Program, and to otherwise enforce the provisions of each.

C. GENERAL PENALTY

In addition to incurring civil liability under RCW 90.58.210 and Civil Actions above, any person found to have

willfully engaged in activities on the shorelines of the state in violation of the provisions of this Chapter or of the Master Program, rules, or requirements adopted pursuant thereto shall be guilty of a misdemeanor and shall be punished by a fine of not less than a thousand dollars (\$1,000) or by imprisonment: PROVIDED, that the fine for the third and all subsequent violations in any five-year period shall not be less than five hundred dollars (\$500).

16.21.145 VIOLATOR'S LIABILITY FOR DAMAGES is not changed

NEW SECTION. There is added to the Island County Code a new section to read as follows:

16.21.146 MASTER PROGRAM REVISION

In order to comply with the Shoreline Management Act (RCW 90.58.190), Island County shall periodically review its Shoreline Master Program and make such adjustments thereto that are desirable or necessary. Any such revisions or adjustment shall be submitted to the Department of Ecology only after completion of at least one public hearing and upon favorable recommendation of the Board of Island County Commissioners. No such revision or adjustment shall become effective until it has been approved by the Department of Ecology. Applications by



private persons for Master Program revisions shall be considered in the same manner as substantial development permits.

16.21.150 SEVERABILITY is not changed.

16.21.155 ADOPTION AND EFFECTIVE DATE

This Chapter is hereby declared necessary to meet the obligations and responsibilities now upon the County of Island and is hereby adopted and shall take effect on the \_\_\_\_\_ day of \_\_\_\_\_, 19\_\_\_\_.

